ISSUE #12 DECEMBER 1988

FOR THE RECORD

by Ed Bittner
Recording Secretary

        This report of the West Penn 99'ers November meeting deals
with the past, present, and future. Firstly, the report is well past
the the due date, secondly, if John Willforth has the presence of mind
(absent most of the time) he will get back at me, and lastly, I will
finish this report within the next hour and a half. The election went
smoothly and the results are reported below; we wish our new officers
the continued success with the club.
        We, as members, should specifically thank Scott Coleman for
being an effective leader of our club since its inception. GOOD JOB
Poo-ba. Honorable mention also goes to Eric Zeno who gave up as full
time librarian with the club, for a full time job which pays $$$.
Thanks Eric.
        Several important announcements at the November meeting
included one by Mickey S. on the Word Processing package called Press
from Asguard Software. John W. commented briefly (believe it or not)
on MIDI, a music device , Atari based — TI adaptable???... (See John).
He also indicated that someone developed a board which has 32K.,
speech, and parallel port. Lastly, he urged the MacFlix purchasers to
kick an additional $2 toward their purchase price.
        Raffle prizes included a Power Supervisor (I Won), a TI Data
Base and Form Shop Programs, Diskette Pens and Home Financial
Decisions. A $20 Raffle for a Data Switcher (Interface) was won by
Frank Zic. Demonstations included "Wheel of Fortune" (J Willforth),
the P- Gram, (Rob Ekl) and the 9640 GENEVE (Gary Taylor), which I
found to be especially interesting. See you at the Dec. 20 meeting.

New Officers:

Pres. : M. Schmitt		V.Pres. : S. Coleman
Rec. Sec : E. Bittner		Treasurer : J. Trayers
Cores. Sec.: G. Kelly		Librarian : R. Ekl

                                        Tardily submitted,
                                        Scoops Bittner

PS: How did you like the PIZZA-Poo-Ba..!!.and Coke, Diet Coke n' Pepsi

TREASURER'S REPORT FOR NOVEMBER 88

FROM JAN TRAYERS

Date	Item	Amount
11/15	CASH ON HAND	$135.25
11/15	LIBRARY SALES	24.00
"	MICROPENDIUMS	27.25
	DISK CASES	5.00
	DISK SALES	38.00
	RAFFLE	54.00
	DUES	25.00
	TOTAL	$308.50
	PIZZA PARTY	– 102.00
	TOTAL	206.50
12/1	DEPOSIT	– 150.00
12/1	CASH ON HAND	56.50

Date	Item	Amount
11/1	BANK BALANCE	$1079.55
11/2	HOME PUBLISHER	_ 125.00
		954.55
11/15	RAFFLE PRIZES (MIKE)	_ 28.00
		926.55
	RAFFLE PRIZES (SCOTT)	– 71.00
		855.55
	POSTAGE	– 69.70
		785.85
11/17	TI BASE	– 166.60
		619.25
"	MICROPENDIUM	– 30.00
	TOTAL	589.25
12/1	DEPOSIT	+150.00
		739.25
	TOTAL CASH BALANCE	**$ 795.75**

HOW TO RECONFIGURE FUNNELWEB 4.10
(Idiot-proof (?) Procedure)
by John Owen, JUG.TX

Everyone told me how easy it is to use the "reconfigure" feature of Funnelweb 4.10. I tried it and couldn't make it work. The docs. assumed I know something I didn't. So, at our last JUG meeting (Oct. '88) we worked thru the procedure and after several mis-fires, came up with the following "cookbook" procedure to change printer call-out from RS232 to PIO (or vice versa).

1. Make a copy of FUNNELWEB 4.10. Leave off the write-protect tab and place this new copy in Drive #1.
2. Auto-load FW 4.10 up to the first menu (Selections 1-9 & A-I).
3. Select Option "I" (CONFIGURE). (It can also be reached by selecting the USER LIST from the 'Editor' menu). DSK1.CF & CG will load and display "CONFIGURATION" and the prompts: (?) HELP, (c-C) BACK, & (F-7) DIR.
4. Hit any key. This brings up the 1st window: SYSINFO, QUIT, INSTALL).
5. Hit "S" (SYSINFO) and get the 2nd window: LOAD, EDIT, SAVE.
5. Hit "L" (LOAD).
7. Hit (Enter).(Loads SYSCON from Drive #1.
8. Hit E (EDIT). This will display the 3rd window: LOADING, DEVICES, COLORS, MENU, XB LIST, & UL LIST.
9. HIT "D" (DEVICES).This will display the 4th window: EDIT PRINTER, FMTR PRINTER, OBJECT FILE, WORK FILE, & PROGRAM.
10. Hit "E" (EDIT PRINTER).The following instruction window will appear: ENTER FILE/DEVICE.
11. Type in : PIO
12. Hit (Enter).

If the Formatter printer is to be changed, the easiest way is to repeat steps 10,11 & 12 as follows before going further.
10a. Hit "F" (FMTR PRINTER)
11a. Type in: PIO.LF
12a. Hit (ENTER).

13. Hit FCTN-9 (BACK) or CTL-C.
14. Hit FCTN-9 or CTL-C again.
15. Hit "S" (SAVE).
16. Hit (Enter) to save the change in DSK1.SYSCON.
17. Hit FCTN-9 OR CTL-C to get back to the top menu.
18. Hit "I" (INSTALL). The 6th window gives two choices.
19. Hit "L" (LOAD-XB/XBII).
20. (ENTER) SOURCE program (DSK1.LOAD)
21. (ENTER) TARGET program (DSK1.LOAD)
22. Hit FCTN-9 or CTL-C.
23. Hit Q (QUIT).

To test the changes, it is necessary to return to the TI color screen and reload FUNNELWEB from scratch. While this has only been tested on FW 4.10, it should be applicable to all 4.xx updates of FUNNELWEB.

DSDD PLATO CONVERSION
by Michael Dorman

INTRODUCTION

One of the things I have been quite interested in was converting PLATO from the original Single Sided/Single Density format to Double Sided/Double Density. A while back, I ran across a text file by Charley Summerhill, that explained just how to do that. The only drawback to his technique was that it required several tools to do the job. In his article he used Advanced Diagnostics, Rapid Copy, the CorComp Disk Manager, and DISK+AID to convert PLATO to DS/DD. Later, Barry Traver issued an Extended Basic program (PLATO/PREP) that simplified the proceedure somewhat. This program and Charley's article were published in Barry Traver's excellent "GEniel Traveler" diskazine.

John Birdwell's "Disk Utilities" version 4.1 or higher contains all the tools necessary to make the changes without requiring the use of any other programs. This speeds up the conversion time tremendously. (The only possible exception to soley using Disk Utilities would be using Rapid Copy to initialize DS/DD disks before beginning the PLATO conversion process. However, Disk Utilities has a pretty fast initialization process and has the advantage of being able to format as we go.)

This article gives the details of how to use Disk Utilities (DSKU) to convert PLATO diskettes to DS/DD. The basic idea remains Charley's and I am grateful for the service that he has provided to the 4A community. For the purposes of this article, I will assume that you have a two drive system and that drive two is DS/DD. If you have a single drive system, the instructions will still work for you. Just use DSK1 when I refer to DSK2 and remember to change diskettes accordingly.

PLATO DISKETTE ORGANIZATION

PLATO diskettes have a fairly simple disk protection scheme. The first is the disk protection that can be installed with the Disk Manager II. This simply writes a "p" to sector 0 of the disk and can easily be changed with a sector editor. The second form of protection for PLATO diskettes is a moved file directory. The directory normally resides in sector 1 and contains the file headers. However, on PLATO diskettes the directory is in sector 359. Sector 0, which causes the disk directory to show the only file to be $$1, is not used by PLATO at all.

We can view the actual catalog by copying sector 359 to sector 1. This will allow us to not only see the directory, but will also allow us to move or copy the files that are on the PLATO diskette. After any changes, however, we must remember to copy sector 1 back to sector 359 since PLATO interpreter expects the file header information at sector 359.

PLATO PROGRAM TITLES

Since PLATO packages generally contain 6 or fewer SS/SD flippy sides, most PLATO programs will fit on a DS/DD diskette. There are a few that won't fit on one DS/DD. In fact, one course contains 14 sides. We will deal with this situation later in the article.

For now, use a package with 6 or fewer sides. Don't use one with only one side if you have others available. (If you don't, then you don't really need this anyway!) The instrutions will use 4 as the number of sides in a package, but it is easy to follow with any numbr that will fit on one DS/DD diskette.

INSTRUCTIONS

STEP 1: Load DSKU and make backup copies of the PLATO diskettes you are going to convert. Use the sector copy method.

STEP 2: Initialize a blank diskette in drive 2 as DS/DD.

STEP 3: Choose "Mark Sector" from the Sector Utilities menu. Mark sector >167 (decimal 359) on DSK2 as used. This will prevent us from copying files over the sector used for file headers for PLATO diskettes.

STEP 4: Select "Edit Sector" from the Sector Utilities menu. After inserting the first backup PLATO diskette in drive 1, select drive 1 and sector >167. Press CTRL-P to printout the sector.

STEP 5: Select "Edit Sector" to edit drive 1, sector 1. Enter the same information from the printout in step 4. This will copy the file header info. to a normal TI format. This will allow us to copy all the PLATO files to the new diskette.

STEP 6: Select "File Copy" from the File Utilities. Copy all the files on DSK1 to DSK2. Press CTRL-P to get a printout of DSK1.

STEP 7: Repeat steps 4 5 for the following diskettes. Copy all the files except TIMENU and $$1 (these are duplicated on each diskette). When you copy DISKMENU from DSK1 to DISK2, increment the filename by 1 (e.g. DISKMENV, DISKMENW, DISKMENX). Press CTRL-P to get a printout of each SS/SD PLATO disk.

STEP 8: Choose "Edit Sector" and select DSK2, sector 1. Press CTRL-P to get a printout. Then, edit sector >167 of DSK2 to match that of sector 1. This will restore the file header info. needed by PLATO into the sector the cartridge uses.

STEP 9: Using either the file editor or the file search options of the file utilities, find "BOOT" in the file DISKMENU. Change BOOT to DISKMENV. Find the string "Select another diskette" in DISKMENU and change to "Select Menu 2 of 4" (4 assumes that there are 4 diskette sides in this PLATO package - adjust accordingly.) Do the same for DISKMENV - change BOOT to DISKMENW and change "Select another diskette" to "Select Menu 3 of 4". Repeat until the last file (DISKMENX) - change BOOT to DISKMENU and "Select another diskette" to "Select Menu 1 of 4".

STEP 10: Using the printouts of the PLATO SS/SD diskettes, find the files that match DISKMENU-DISKMENX. They are the remaining filenames (excluding $$1 and TIMENU). For each of these filenames, sector edit the file to change the string "DISKMENU" to the appropriate menu (i.e. DISKMENV, DISKMENW, and DISKMENX). Since the first diskette corresponds to DISKMENU, there is no need to change the files that are on that diskette.

CONCLUSION

You should now have a complete PLATO program on one diskette - probably with room to spare! There are two occasions that might arise making a DS/DD PLATO diskette. One is the problem of diskettes that only have one program on a side. On these diskettes there is no menu to select from and the diskette autostarts. The method suggested by Charlie Summerhill is to use a DISKMENU file from another disk and modify it to use the program name used by the diskette (e.g. LESSON).

The other difficulty comes when the total files of a lesson add up to more sectors than are available on a DS/DD diskette. In that case, you will need to break the program up into 2 or, at the most, 3 parts. On the last DISKMENU file on each half (or third), leave the word BOOT and change the menu to say "Change Disk-See Menu x" where x will be the first menu on the next diskette. The BOOT causes the cartridge to go through a reboot sequence that reads the next disk.

I'm looking forward to adopting the same ideas to 3-1/2" diskettes or, better yet, to a hard drive.

Here we go together No.16. Since I have prepared the
following instructions for typing a message with
"THE PRINTER'S APPRENTICE" for a classroom presentation
I thought perhaps an article might help some others
who might be having some difficulty too. This article
suppliments my article No.14 and should be easier to follow.

1 Place the TPA disk in drive #1 (APA-99) side active.
   Note: This is a slow loading program.
2 Select "1" CHARACTER EDITOR. Note: Imagine a coma in between
   each word. This gives better definition to each of these
   command words. Improved seperation was not possible on
   the disk because all of the 360 sectors are used.
3 Select "S" for SETUP. ###Press ENTER.
4 Select "S" for SOSH. ###Press ENTER. Notice there is no
   flashing "S" from the previous selection of the "S" from
   above in step No.4. Sometimes the previously
   selected letter will be flashing at the spot where
   the next selection is to be placed. Some times this
   spot is blank and at other times it will have an
   entirely different letter flashing there. I feel
   it may be best to just ignore what appears so as
   not to get confused. Simply note that when you select
   a letter for this spot, it will appear and not be flashing.
5 Select "D" for DISK. ###Press ENTER.
6 Select "F" for FILENAME. ###Press ENTER.
7 At this time flip over the disk in No.1 drive to
   make the APAFILES side active.
8 Type in DSK1.BAUHAUS. ###Press ENTER.
9 Select "X" for EXIT. ###Press ENTER.
10 Select "E" for EDIT. ###Press ENTER.
   Note: A column of numbers will appear on the left.
   side of the screen.
11 Press CTRL/9 . Press the letter "W". The "W" is just an
   example of any letter that may be selected. The "W"
   will appear in the line ASCII CHAR TYPE. ###Press ENTER.
12 ###Press ENTER. This selects the next default(87).
13 ###Press ENTER. This selects the next default(24).
14 Select "R" for READ. ###Press ENTER.
   Note: A medium size "W" appears at the top of the screen.
15 Press CTRL/R. Note: A large "W" appears on the left
   side of the screen.
16 Press FCTN/9.
17 Select "P" for PRINT. ###Press ENTER.
18 Select "P" for PRINTFILE. ###Press ENTER.
19 Type in PIO.CR or your printer designation.
   ###Press ENTER.
20 Select "V" for VARIABLES. ###Press ENTER.
21 Select "G" for GEMINI or "E" for EPSON.
   ###Press ENTER.
22 Select "S" for SO. ###Press ENTER.
23 Type in "20" for LEFT MARGIN. ###Press ENTER.
24 Type in "60" for RIGHT MARGIN. ###Press ENTER.
25 Type in "4" for SPACE. ###Press ENTER.
26 Type in "2" for INTERCHARACTER. ###Press ENTER.

27 Type in "N" for NO CENTER LINE. ***Press ENTER.
28 Select "S" for STRING. ***Press ENTER.
29 Type in your message, for example... I HOPE THIS WORKS.
   ***Press ENTER.
30 Turn on your printer.
31 Select "G" for GO. ***Press ENTER. Note: As the
   printer completes your selected message, that same message
   will appear on the screen.
32 This ends this portion of how to use THE PRINTER'S APPRENTICE.
   Note: Should you want to print a different message or
   change some of the parameters, you need only - Select
   "B" for BACK and then Select "V" for VARIABLES, (Step No.20)
   change the numbers to experiment and see how they affect
   your printout. Try other printing styles by loading in some
   different FONTS from the TPAFONT1:1 and TPAFONT1:2 disks.
   The best way to learn more about this versatile program is
   to take one part of it at a time, just as we are doing now.

   I sincerely hope this rather lengthy but by no means complete
   discussion helps you with this difficult to follow program.
   To help with your next attempt, I have included the following
   short-cut listing. Press ENTER for each comma in the list:

   1 S,S,D,F,(Flip TPA disk) DSK1.BAUHAUS,X,E,CTRL/9 W,,,R,
   CTRL/R FCTN/9 P,P,PIO.CR,V,G or E,S,20,60,4,2,N,S,
   (Enter your message and turn on the printer) , G.

   Until next time may the good 4's be with you.

FOR SALE:
  1) TI-99/4A Console -$40. 1) TI ORIGINAL ------$55. 1) TI ORIGINAL -----$55.
  1) TI ORIGINAL ------$55.   Stand-Alone RS232   Stand-Alone Disk
     Stand-Alone Disk Drive   Controller (SSSD)
  1) Household Budget -$ 5. 3) Adventure Modules -$ 5. 1) Hangman Cart. ---$ 5.
     Management   (EACH)
  1) Tombstone City----$ 3. 1) Hunt The Wumpus ---$ 3. 1) Munchman --------$ 3.
  1) Voodoo Castle ----$ 3. IF INTERESTED CONTACT:
MICKEY SCHMITT 196 BROADWAY AVENUE, LOWER BURREL, PA. 15068, (412) 335-0163
  after 6:00 PM E.S.T.

FOR SALE OR TRADE:
  1) TI ORIGINAL (PEB) RS232/PIO CARD ($80. or trade)
  1) MBX w/5 Cart.'s (Sale or trade)
  1) "BIG BLUE" Thermal Printer (Sale or trade).
  Looking for AXIOM Parallel Interface.   CONTACT:
JOHN PHILLIPS ROUTE 2 BOX 770, VAN BUREN, AR. 72956 (501) 474-8815

FOR SALE:
  1) TI ORIGINAL (PEB) RS232/PIO CARD ($80.)
  1) TI EXTENDED BASIC MODULE with Manual --------- $30.
  1) TI (w/switch) PCODE CARD w/all docs and disks $100.   CONTACT:
JOHN WILLFORTH R.D. #1 BOX 73A JEANNETTE, PA. 15644 (412) 527-6656

SUPPORT SOFTWARE FOR CLOCK CIRCUIT...
   For those of you who built the clock circuit in the June issue of the PUG, or
the WP99'ER, Rod Cook of Newark, OH has written some XBASIC/ASSEMBLY routines
to read the clock. They are placed in the public domain by him and you can get
a copy either from me or Rod. Rod will send the source code to anyone sending
a SASE to: ROD COOK 2314 Fallsburg Rd. N.E., Newark, OH 43055

DISK DRIVES (#4)
by John F. Willforth

If you studied the simple drawing of a Disk Drive Exerciser and read the discription (#2 and #3) you may already have a better idea on how a disk drive operates in conjunction with the controller and the diskette (storage media). I would now like to take some time to describe the basic concepts of disk drives. The jobs the drive has do is:

1) Recognize when it is called on so it is the only unit to respond (DSx).
2) Let the controller know if a disk is present and rotating (INDEX).
3) Let the controller know if the drive is at Track 00 (INITIALIZED).
4) Let the controller know if the disk may be written on (not in the WRITE-PROTECTED mode).
5) Some drives put out a READY status to indicate that they are ready for additional commands.
6) Recieve the MOTOR ON term and simply turn on the spindle motor (turn the disk at 300 RPM).
7) Recieve the DIRECTION command on a SEEK or STEP to a command (IN/OUT).
8) Recieve the SIDE command (DS drives only) to select head 1 or 2.
9) Recieve the STEP command (after DIRECTION) to move the head(s) to the one track (cylinder) the CPU and controller decide has the sector(s) you are looking for.
10) Recieve the WRITE GATE (enable writing circuitry) command for preparing the drive to convert the digital data that will be coming on the WRITE DATA line and gate it to the WRITE HEAD part of the HEAD as analog data. The HEAD has both READ and WRITE windings in it.
11) Provide the CONTROLLER with the READ DATA coming from the READ part of the HEAD in a modified and amplified state. This includes ALL DATA that the HEAD reads (PREAMBLE, HEADER INFORMATION, DATA, and CHECK SUM). It is not smart and must leave it up to the controller to decide if it is at the right TRACK, SECTOR, and if the DATA is correct, CHECK SUM compares).

That's all that there is to it. I'll now go into some detail on each of the above, step by step. Some are very simple and quite obvious, and others are are too!

First the DEVICE SELECT jumpers on your disk drive are there so that you can have up to four drives on your controller, and by jumpering the drive select circuit on a drive, it and only it will respond to a 0-Volts potential on it's DSx line (provided you haven't strapped another drive for the same DSx).

Next let's look at what happens when you insert a disk and call for a list of files on that disk (READ). When you tell the disk manager that you want to catalog the disk, the controller recieves instructions from the CPU to SELECT a drive, and what functions to perform in approximately this order:

1) Select DRIVE
2) Turn MOTOR ON and wait for up to speed (INDEX frequency)
3) Check TRACK 00 and reference FLOPPY CONTROLLER chip to see if the drive was at track 00, or at another track from a previous operation.
4) Select DIRECTION and step the HEAD STEPPING MOTOR in that direction a specific number of pulses. Controller looks this up to see how many step pulses must be given. The controller must ALWAYS know where the HEADS are before it can move them to a new track.
5) Apply proper number of STEP pulses to get the HEAD(s) over the right track on the disk.
6) The CPU and CONTROLLER will select a HEAD. Based on this READ we will sel. HEAD 1 (bottom), and gate it to the READ DATA line to the controller.
7) Now wait for the next INDEX pulse (synchronization of mechanical disk to the electronics).
8) READ everything. At this point the controllers job is to handle separation of HEADER (address etc.) and DATA, and CHECK WORD information. The continues to turn on this one track and read until the controller gives it another job to do. The information will now be acted on by the CPU or CONTROLLER and if a read error occurs, well that's going to have to wait until next month.

I did want to includ the disc to the right which is used to check and adjust the speed of the older type disk drive with the belt driven SPINDLES. The disc can be attached to any drive to check the speed, as long as you center it on the end of the SPINDLE and not the MOTOR. After you have attached the disc you can either run a program that will keep the disk drive running, or you can ground pin 16 on the drive with only the power plug hooked to your drive. If you built the DISK DRIVE EXERCISER, just flip switch S2. Look at the disc and adjust the motor speed pot. until the bars appear still. That's all! - I'll pick up where I've left off today on READING, WRITING and a few tips next month.
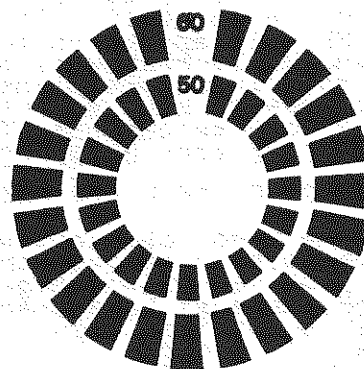
ERRORS, I'VE MADE ERRORS. I'VE MADE LOTS AND LOTS OF ERRORS (John Willforth)

In the May issue of the WP99 in an article based on the MBP Card, I made an error on the CLOCK (58167) chip. Add a "RDY" pin 4 and take it to ground.

In the June issue of the WP99 I wrote an article summing up the efforts of others in building a CLOCK circuit in the TI console or speech synthesizer. The article was not without error, and now for those who put the contraption on the shelf in frustration, you may want to give it one more try.

First U2 output to U3 is marked pin 14, change that to pin 11. Next the clock might have partially worked, but had very strange times displayed. The data bus was 180 degrees out. D7 in the clock chip was going to D0 (pin 34) on the console I/O connector. It should have gone to pin 37. D6 to D6 (pin 40), D5 to D5 (pin 39) etc. and finally D0 to D0 (pin 34). The clock does work and has been built by many.

In the October issue of the WP99 the article on the Disk Exerciser has a few mistakes. The Parts List shows C1, C2 as 470 pf. caps, but should read C1,C3 as 470 pf. caps. The second item should therefore read C2- 1 ufd. Capacitor. I also failed to show a Momentary contact switch in the Parts List as S6.

The last correction (I hope!) is that IC U1a pin 7 (to +5) should be pin 14, and U1d pin 14 (to ground) should be pin 7. ie: the 74LS04 has ground and +5 reversed.

PUTTING GROM BASED CARTRIGDES IN YOUR CONSOLE (The easy way) John F. Willforth

If you would like to install several (up to 6 GROM chips) inside your own console without any circuit boards, and just a little wire, listen up!

Because the addressing is internal in a GROM, they can be stacked, and all of the GROM sockets in the TI-99/4A are pin for pin identical to each other. Take GROM 0,1 and 2 from their sockets above the CPU chip, and stack them carefully and solder ALL 16 of their legs together. Now plug the whole 3-Chip unit in the GROM socket next to the Sound chip, observing direction (pin 1 location). Now you will note that you have two empty GROM sockets with the potential of six of these little beasties being stacked right on the CPU board. First though you better test the console to see that you have everything still operational.

Multi-Plan requires five GROMS, and Editor Assembler one, for a total of six, and this will be one example of a full boat for these sockets without cutting a hole in the RF shield to stack these chips to sky-scraper proportions. You may prefer TI-Writer, one GROM, Disk Manager II, two GROMS, or any of the many GROM only cartridges that TI made, even games could be included in this list.

To keep this simple, however, I reference Multi-Plan, and Editor Assembler. Remove the groms from their circuit boards carefully. Since you must keep all five of the MP chips selected at the same time, I would recommend that you make note of the E/A chip so that it doesn't get mixed with the MP chips just yet.

Stack any three of the MP chips and solder them together as you did to the console GROM chips earlier. Cut the part of pin 14 off the bottom chip of this 3-chip unit so that when this unit is inserted in the middle of the three sockets, there will be no connection to the corresponding pin in the GROM socket, but be sure that all three GROM pin 14s are soldered together. Now take the other two MP GROMS and piggyback them, and cut the bottom of pin 14 as before. Pick up the E/A GROM, and bend pin 14 straight out, you don't have to cut it's pin. Slip the two MP GROMS on the TOP of the E/A GROM, and solder ALL but 14.

Using 3- 12"lengths of multi-stranded wire (ribbon-cable works well), attach the center wire to the column of three pin 14s on the console GROMS by using a low wattage soldering iron, and one of the other two wires to the single pin extended from the E/A GROM, and the remaining wire to the two pin 14s of the MP immediately above the E/A GROM. Connect the two MP GROM pin 14s to the three MP GROM pin 14s in the middle GROM socket using a short length of wire.

Using a SPDT switch (on that is OFF in the center, and will stay on when it is thrown to either side), solder the center wire (from pins 14) of the console GROMS to the center lug on the switch. Attach the other two wires to either of the two remaining lugs on the switch.

Before buttoning up the console test the switch to see that if the switch is in the middle on power-up, only Console BASIC is on the menu. When the switch is thrown in on of the two possible directions, on power-up, BASIC and EDITOR-ASSEMBLER will appear on the screen, and in the third position, on power-up, BASIC and MULTI-PLAN will appear on the screen. Then locate the switch inside the console in a convenient position, and button it up.

If you desire more selections, follow this same scheme but use a rotary sw. to allow more selections. This works, and should take very little time. You may want to order your GROMS from TI, instead of tearing up a cartridge. GOOD LUCK!

DO YOU KNOW OF AN EPSON PRINTER WITH A BAD PRINT HEAD?

When the Epson came out with their MX, FX lines of printers the ads said you would be able to replace the NEW STYLE REPLACEABLE PRINT HEAD for $35.! Well if any of you ever tried to get one for $35. you probably found that the shipping and handling must have been in the neighborhood of $90. because the going price was $125.+ for this PRINT HEAD. When the printer cost originally was over $500. this was not too bad. Now you can get printers that are more EPSON COMPATIBLE than EPSON, for $125. and with a two year warranty, who would pay $125.+ for a print head?

Well, while flipping through the pages of the latest COMPUTER SHOPPER, I cam across an ad by ALLTECH ELECTRONICS CO. INC, 1300 E. EDINGER, SUITE D, SANTA ANA, CA. 92705, (714) 543-5011 for an EPSON PRINTER PRINT HEAD CAT.# A24A31-E for $12.95!

MACFLIX : A TECHIE TIP
by Robert J. Coffey   (Western New York)

The key to getting a perfectly proportional picture is to have the density
of pixels the same both horizontally and vertically. A ratio of 1:1 to what
you'd like, but not all printers offer it! In the vertical direction, printers
(9-pin) have a density of 72 dots per inch. (So what you would like ideally is
72 per inch horizontally!) In Medium Resolution, MacFlix will select the
graphics mode of #4, which is 80 dots per inch horizontally. That is pretty
good, but we can do better than that ! Graphics mode #5 offers 72 dots per
inch horizontally (exactly what we want !). In order to get MacFlix to choose
#5 instead, you will need to go into sector editor (Disk Utilities is one of
the better ones) and search for the hex string "1B2A04". After you have found
it, you'll want to change that "04" to a "05". Save that sector back out and
you're all set ! Now when you select Medium Resolution the MacPaint pistures
will go across the full 8 inches of the page, like they were suppose to ! Why
J.P. Hoddie did'nt do this in the first place is beyond me! (Ed. note, J.P.
Hoddie is forgiven!) Remember, only the newer printers have this capability!

HEAVY ITEM (PORTABLE POWER FOR YOUR COMPUTER).....................................
The now defunct OSBORNE COMPUTER had a power converter available to enable
you to plug it into your car battery. John Johnson of the MIAMI U.G. tells me
that he bought and was able to power his TI/PEB from the unit. I ordered two
of the little rascals, and will have them at the DECEMBER meeting. I under-
stand that they are just a few cubic inches in size, and cost just $10. each.
Available from: WOSWICK INDUSTRIES INC., 4898 RONSON COURT, SUITE H, SAN DIEGO
CA. 92111 or phone (619) 571-5400   12V./110V converter for the OS-1.

1989 WP 99 OFFICERS: PHONE #: ADDRESSES:...............................

	PHONE #	ADDRESS	CITY	STATE ZIP
PRES.----Mickey Schmitt	335-0163	196 Broadway Ave.,	Lower Burrell,	PA 15068
V.PRES.--Scott Coleman	523-3754	R.D. #1 Box 205,	Greensburg,	PA 15601
SCTY.----Ed Bittner	864-4924	92 Corbett Ave.,	Irwin,	PA 15642
C. SCTY.-Gene Kelly	829-0469	444 Wall Ave.,	Wall,	PA 15148
TREAS.---Jan Trayers	863-1575	2151 Mickanin,	N. Huntingdon,	PA 15642
LIB.-----Rob Ekl	864-1233	920 Whitehead Lane	N. Huntingdon,	PA 15642
N.S.L.E.-John Willforth	527-6656	R.D. #1 Box 73A	Jeannette,	PA 15644

### EDITORIAL COMMENT.....BY JOHN F. WILLFORTH

How would you like it if I were standing on a street corner, cold and hungry
and with my hand out, you gave me a couple of bucks for food or shelter, and I
took the money and went to a bar for a drink? What would you think if the Fed.
Government collected your tax money for social security, and spent it all on
illegal aliens, or anything that it was not meant for? What would you feel like
if your TI U.G. DUES were being used so that I could support IMSAI, ALTAIR, or
even IBM? What about me using this medium to try to talk you into switching to
a machine that I feel everyone should have. I DON'T HAVE ANY RIGHT TO PROMOTE
ANY OTHER MACHINE, EITHER IN THIS NEWSLETTER, OR AT ANY TI U.G. FUNCTION!
I have seen a couple of the most blatant, arrogant, and selfish examples of
this in a couple newsletters lately! Could it be that a well oiled, well run
and already financed club is what these people want.
We who by pen or office in the TI family, influence many others. I take it
seriously this responsibility. Some seem to just TAKE IT! We had better start
to support rather than destroy.
We in the WEST PENN 99'ers and the PITTSBURGH USERS GROUP, have seen a very
great and continuing flow of NEW HARDWARE, and SOFTWARE. Yet there seems to be
some who do not see this. Is it because they wish to see something else? BLUE?

If you liKed..
THE
WRITERS
You're gonna love..
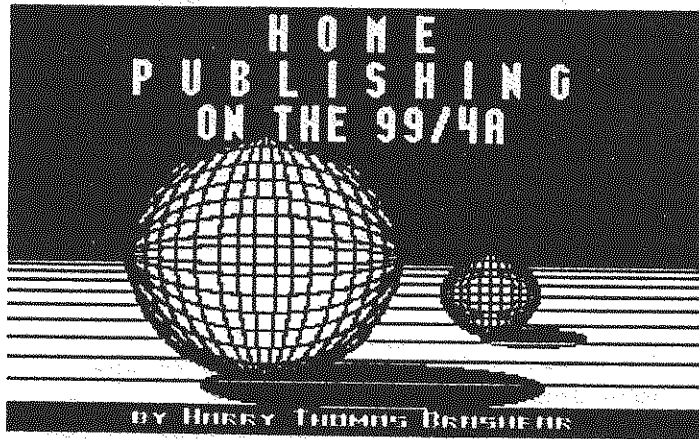
HOME PUBLISHING IS NOT A MANUAL ON HOW TO PROGRAM THE TI COMPUTER. IT'S A MANUAL ON HOW TO USE THE PROGRAMS WE HAVE FOR THE CREATION OF BEAUTIFUL BANNERS, PICTURES, AND CREATIVE TEXT.

IT WILL SHOW IN DETAIL WHAT CLIPS AND INSTANCES ARE AND HOW TO USE THEM. IT ALSO CATALOGUES OVER 160 FONTS AND SHOWS HOW THEY MAY BE USED.

HOME PUBLISHING TALKS ABOUT THE MANY GRAPHIC PROGRAMS. JUST HOW THEY RELATE TO EACH OTHER, OR HOW TO PUT THEM TOGETHER TO WORK FOR YOU.

BUT IT DOESN'T STOP THERE. THE MANUAL YOU GET IS EIGHTY PAGES LONG... AND IT JUST WASN'T ENOUGH. FOR THE COST OF THE ORIGONAL MANUAL YOU WILL ALSO RECEIVE TWO TWENTY PAGE SUPPLEMENT ISSUES DURING THE COMING YEAR. THIS IS SO YOUR MANUAL WILL ALWAYS BE UP TO DATE WITH INFORMATION ON THE LATEST IN GRAPHICS SOFTWARE.

YOU WILL ALSO RECEIVE A DISK OF PROGRAMS TO HELP YOU MAKE YOUR DOCUMENTS LOOK THEIR BEST. THE PROGRAMS INCLUDE A TI-ARTIST INSTANCE PRINTER THAT WILL NOT LEAVE ANY SKIP LINES IN THE PRINTOUT, A PROGRAM TO ORGANIZE YOUR FONTS AND GRAPHICS, AND THE WORLDS BEST COLUMNIZER.

THE TOTAL COST FOR THE COMPLETE PACKAGE WILL BE $15.00. THIS WILL INCLUDE ALL POSTAGE AND HANDLING. FOR GROUP PURCHASING OF A MINIMUM TEN COPIES, THE COST WILL BE $12.50 EACH INCLUDING POSTAGE.

MAKE CHECKS PAYABLE TO: WESTERN NEW YORK 99ERS
            c/o HARRY T. BRASHEAR
            2753 MAIN STREET
            NEWFANE NY, 14108

THANK YOU! THIS PAGE WAS MADE USING THE **PICASSO PUBLISHER**

PLEASE SIGN ME UP FOR_____COPY(S) OF HOME PUBLISHING AT $15.00 PER COPY TO INCLUDE SOFTWARE AND TWO(2) UPDATES.

PLEASE SIGN UP OUR GROUP FOR TEN COPIES PLUS_____EXTRA AT $12.50 PER COPY TO INCLUDE SOFTWARE. UPDATES WILL BE MAILED TO INDIVIDUALS AFTER REGISTRATION.

PLEASE SHIP TO: NAME _____   AMOUNT
      ADDRESS _____ ENCLOSED
      CITY,ST _____
        ZIP _____   [$]
    GROUP NAME _____

THE "ZENOBOARD"............... (A new piece of hardware for the TI-994A)
          by Eric Zeno (West Penn 99'ers) December, 1988
          (written by John F. Willforth)

     Have you had your console lock-up after you had just about
finished keying in a long XBasic program, or have you had a
game running under XBasic just stop when you were about to get
your all time best score, or has a utility stopped as you were
just about done entering the last of the names and addresses?
The "ZENOBOARD" (as I call it) some reference to "ZUCKERBOARD"
will accept the chips from your XBasic cartridge, as well as
a 32K Byte Static Ram chip, and a battery backed clock circuit
and the chips from your speech synthesizer. It will also have
GROM chip locations, so you can install your most used GROM
based cartridges right in your console. The Extend Basic is a
very common cause of lockups, and can now be installed inside
the console, almost eliminating lockups. Included , you'll get
the installation instructions to aid in the
installation of this board inside the console
and the above mentioned items on this board.

     Eric plans to offer this board for less
than $15. The intent here is to find out if
there is enough genuine interest or need for
the board for him to continue. If you would
like to see one of these, and would support it
write or call Eric at the address below.

     Specifications:
 * Fits inside console above CPU board and
   solders directly to back of GROM conn.,
   with just a few wires to the CPU board.
 * Requires no additional power.
 * Includes RESET circuit
 * Can be expanded or configured as the user
   requires.
 * Supports 32K STATIC RAM
 * Supports Battery-backed CLOCK
 * Supports SPEECH SYNTHESIZER
 * Supports EXTENDED BASIC
 * Supports additional switch selectable GROM
 * Do-It-Yourself low cost
 >>> SOME TECHNICAL ASSEMBLY REQUIRED<<<
DO not order at this time, because the idea is
quite attainable, but there may not be enough
demand to complete the project. Write/call:
     ERIC ZENO   (412) 371-4779
     414 HIGHLAND RD.
     PITTSBURGH, PA 15235   (SASE Please!)

NOTE: I didn't have a more recent drawing of
the board at this printing, but I didn't want
to delay passing this new hardware effort to
you until January. Eric needs to know soon so
that he can take advantage of the longe winter
nights to finish the board and get it out to
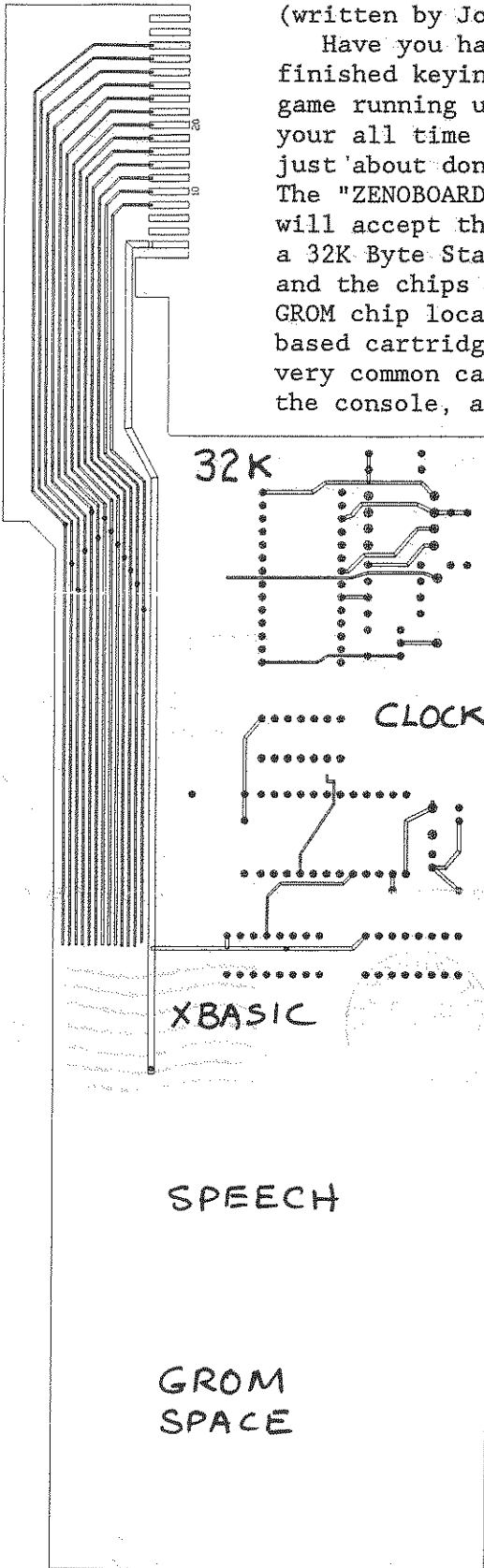you.   JFW

FIG. 1 THE ZENOBOARD

THE DECEMBER MEETING WILL BE HELD AT THE UNITED PRESBYTERIAN CHURCH OF THE COVENANT IN DOWNTOWN IRWIN,PENNSYLVANIA AT 7:00 PM, AND BOY WHAT THINGS WE HAVE PLANNED. (BESIDES THE FREE FOOD AGAIN THIS MONTH)

I HAVEN'T THE COMPLETE INFORMATION AVAILABLE HERE FOR ALL THAT WILL BE SHOWN BUT WE SHOULD REALLY HAVE A GREAT TIME. PLEASE COME.

GARY TAYLOR WHO HAS HIS WINCHESTER NOW RUNNING ON HIS GENEVE AND TI-99/4A, IN ALL PROBABILITY, WILL NOT BE ABLE TO SHOW HIS HARDWARE AT THE DECEMBER WP99 MEETING BUT FOR THOSE WHO CAN ATTEND, WILL BE SHOWING IT AT THE PITTSBURGH USER GROUP MEETING AT 6:00 PM AT THE ALLEGHENY COMMUNITY COLLEDGE (SOUTH CAMPUS) ON DECEMBER 18TH. YOU ARE INVITED.

I WILL BE PRINTING A LIST OF ALL THE TAX PREPARATION PROGRAMS/TEMPLATES THAT ARE AVAILABLE FOR THE TI COMPATIBLE SYSTEMS IN THE JANUARY ISSUE OF THE WP99ER. THESE ARE NOT READY YET, SINCE THE INFORMATION IS NOT YET AVAILABLE TO THE ONES WHO WRITE THE SOFTWARE. IF YOU HAVE ANY INFORMATION, I WOULD APPRECIATE IT IF YOU WOULD FORWARD IT TO ME ON THE NAME, ADDRESS, PHONE #, PROGRAM NAME, AND IF POSSIBLE COST AND DESCRIPTION, BEFORE THE 6TH OF JANUARY, FOR PUBLISHING IN OUR NEWSLETTER.

THE FINAL INSTALLMENT OF STAN KATZMAN'S SERIES OF PASCAL ARTICLES IS VERY EXTENSIVE. IT INCLUDES A PROGRAM WITH DESCRIPTION, "INVOICE PROGRAM". I CAN'T PRINT IT IN THE NEWSLETTER, BUT HAVE IT AVAILABLE ON HARDCOPY OR DISK. IF YOU WANT IT ON HARD COPY, SEND $.65 IN POSTAGE TO COVER MAILING, OR A DISK OF THE ENTIRE SERIES WITH THE PROGRAM, SEND $1.00 TO MY ADDRESS ON THE FRONT OF THIS NEWSLETTER.

SEE YOU AT THE MEETING!   SEE YOU AT THE MEETING!   SEE YOU AT THE MEETING!

WEST PENN 99'ERS

% JOHN F. WILLFORTH
R.D. #1   BOX 73A
JEANNETTE,   PA
            15644

PITTSBURGH, PA
DEC 13
PM
1988

25 USA

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MERRY CHRISTMAS TO:
MICKEY SCHMITT
196 BROADWAY AVE.
LOWER BURRELL PA 15068

MERRY CHRISTMAS!