

## TI-99/4A Lives On!

*An Orphan Survives with Help of Loyal Users, Vendors*

by Joel Dreyfuss

One nightmare haunts the consciousness of computer users who skate on the cutting edge of technology: to wake up one morning and discover that the manufacturer has stopped making their beloved machine. Such abandonment may be inevitable in the fast-changing world of computers, but it doesn't soften the blow. Those who cut their teeth on CPM-based Osbornes and Kaypros were soon cast adrift in the surging tide of MS/DOS. In turn, quite a few owners of Eagles, Victors and Columbia personal computers found themselves abandoned when those companies went bankrupt.

The most famous—and most widely used—orphan computer of all may be the Texas Instruments TI-99/4A, launched 10 years ago as the chip maker's entry into the fledgling market for personal computers. With comedian Bill Cosby as spokesman, Texas Instruments made some 3 million of the little slab-like machines during a four-year period before getting caught up in a price-cutting war it couldn't win.

In December 1983, TI announced it would stop making the TI-99/4A. For thousands of users, the nightmare had come true: They were out in the cold.

But the 99 lives! There's no better proof than the Texas Instruments Forum (GO TIFORUM), where "99" diehards share information about equipment, software and technical problems, and track user group meetings in the United States, Canada, Europe and Australia.

Since abandonment made the 99 by necessity a hacker's machine, it isn't surprising that programming languages dominate the forum's libraries: Forth, C, Assembly, BASIC, Pascal and P-system. But there also are games, utilities and music programs. The TI Forum bristles with advice for the beginner who has just dusted off an old 99, but it also will guide the expert through a complex programming problem.

No doubt, the large number of machines produced by TI created a user base large enough to assure the computer's survival and guarantee profits to the companies who service 99 users. So does the 99's sturdiness. Texas Instruments was a military contractor and the 99 was built to meet military specifications. "It could probably take two hits of a .50-caliber machine gun and survive," says Jim Horn, a Rockville, Md., resident who administers the forum. Horn, who is

retired from the military, is one of many users who first came across the 99 in a PX and fell in love with it.

The 99 was more than tough. It was an advanced machine for 1979: a 16-bit computer when Apple IIs and CPM machines used 8-bit chips and long before the PC was a gleam in IBM's eye. Initially it was a modest machine with 16K RAM, 72K of ROM, a built-in operating system and a cartridge slot, but TI soon introduced an expansion box that gave the 99 a future. The box had eight slots and the capacity to control disk drives. Horn estimates that 80 expansion cards are now available and that users hook up everything from external hard disks to laser printers.



Dispenses expert TI advice: *Beebe*

Unlike the fate of most orphan computers, a number of companies still actively support the 99: Myarc, a New Jersey manufacturer, makes the Geneve card, which gives the 99 an 80-column display, extended memory and advanced graphics. Asguard, a Maryland software distributor, has introduced 25 software products for the 99; Triton, a distributor owned by software giant Ashton-Tate, carries products for the 99, including a version of Microsoft's Multiplan spreadsheet that sells for \$18. Even TI, the original maker, provides some support. According to users, the company will repair the interface box that connects the 99 to a television set.

Another reason for the 99's resilience is the constantly evolving base of new young users who turn up those strange little slabs. "We call them third-generation users," says Horn. "But the first and second generations never opened the box." To a beginning computerphile, the

99's first attraction is price: a shrink-wrapped 99 console sells for \$75; you can pick up a used 99 for about \$25 at a computer fair, and as little as \$5 at a yard sale.

Matt Beebe is one of those "third generation" users, a 15-year-old who often dispenses expert advice on the forum. Beebe, who lives in Millford, Mich., 50 miles northwest of Detroit, got his "4A" in 1980 when he was just seven. He started with games and simple programming and expanded his machine for word processing when he reached junior high school. He later added a modem and a CompuServe subscription.

Beebe, who helps out on the TI Forum, estimates that he spends 20 hours a week online writing messages and answering questions. His age has never been an issue: "On CompuServe nobody ever thinks to ask how old you are," he says.

Beebe, who takes computer classes in high school, had a big decision to make last year: Should he switch to an IBM PC? He evaluated the costs and decided to stick with the 99. "The IBM would have cost twice as much and not given me much more except—maybe—a better word processor," he concluded. He added a Geneve card and color monitor (512 by 640 resolution) and is working on some software he hopes to sell commercially. He does offer a backhanded compliment to the IBM PC he uses at school. "It's really nice," he says. "You can do just about anything you can do on the 99/4A."

His loyalty is typical of 99ers. They scrounge the junkyards for machines, travel hundreds of miles to user group meetings and fiercely defend their aging machines against the adoration of the newer and better that dominates the world of computers.

Horn has his own pet project. He wants to rescue the thousands of 99s gathering dust in closets and basements and get them into the hands of the many children who don't own their own computers. One teacher who obtained a number of 99s reported important gains when she allowed students to take their computers home, something she couldn't do with more expensive machines.

Horn tries to explain that fierce cult-like allegiance of 99ers. "We've been out on the limb since December 1983," he says. "We're a community. It's wonderful to enjoy the freedom that being an orphan gives you. Nobody's going to rescue you." For those loyal 99ers, the TI Forum on CompuServe is the lifeline to a world of support.

*Joel Dreyfuss, who covers the computer industry for Fortune, has a Kaypro II in his closet.*

# TI's Legends

There have been many stories about things that TI was working on for their home computer before they shut down the home computer division due to heavy financial losses. There were several items that TI pre-advertised before actual availability, and many others that never made it to that point. This article is going to cover many of these hardware items that were never officially released thru proper channels. The purpose of this information is for your personal enlightenment, as well as some historical significance, since very little mention has been made in other reading material. All of this information comes from first hand knowledge and actual use of the mentioned items. These products are not figments of my or anyone else's imagination, they were and are real. Calling Texas Instruments to verify this information will put you up against a blank wall. The people you will get on the phone weren't even around when some of these projects were going on, and no one will admit that this equipment was ever made, much less left the premises.

## SOME OF TI'S LEGENDS

TI-99/4	The "Original"
TI-99/4A	The Computer most of us have grown to love
TI-99/4B	The first "missing" computer between the 99/4A and the 99/8
TI-99/5	The "WAXWING 5", the second "missing" link computer
TI-99/2	TI's entry into the TIMEX arena
TI-99/8	The ULTIMATE TI home computer
TI-CC40	TI's entry into the portable arena

## PERIPHERALS

THE GROM BOX	DS/DO CONTROLLER
IEEE-488 INTERFACE CARD	VIDEO CONTROLLER CARD
128K SUPERRAM CARD	.5 MEG RAM (512K) CARD
FORTI 4 CHANNEL MUSIC CARD	TIMER CARD
SUPER MODEM CARD	4 PORT RS232 CARD
EPROMMER CARD	HEX-BUS ADAPTER

## HEX-BUS PERIPHERALS

RS232	MODEM	WAFERTAPE DRIVE
PRINTER/PLOTTER	PRINTER 80	
5 1/4 DISK DRIVE/CONTROLLER	VIDEO INTERFACE	

The 99/4 is what started it off for TI in the home computer market. Originally designed in the late 1970's, it finally hit the market in 1980, and for over \$1100, you got a 16K, 16 bit computer with built in BASIC, and also a 19" color monitor. The worst thing about the 99/4 was the keyboard. It used the same chiclet style keys found on TI's entire line of calculators. It also was very limited when it came to expanding-in fact at first, there was no way to expand it at all! That came months later.

This series will be continued next month when space permits. Stay tuned! -ED

\*\*\*\*\*  
\* Tetris \*  
\* \*  
\* by Steve Karasek \*  
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COMPUTER BRIDGE, JUNE 1989

In this game, random shapes made up of four square blocks will drop from the top of a 10-column wide section of the screen. The object of the game is to rotate the shapes and move them from side to side so that when they drop in place among the previous shapes, they will form solid lines across the screen. When a line is formed, it will disappear from the screen, and the partial lines on top of it will drop down. The game ends when the shapes have piled up to the top of the screen.

When the game starts, you are asked for a starting level from 1 to 9. At level 1, the shapes drop very slowly, giving you plenty of time to move them into position. At level 9, they move quite fast. The scoring is higher for each succeeding level, however, so once you have some experience, you will want to start at one of the higher levels so that you score more points.

For each game, the screen will start out empty, with the current level to the left and the score to the right. The high score for this session will be displayed above the current score. Press ENTER to start the game.

You may use either your right hand or your left hand to control the shapes. Make sure the ALPHA LOCK key is depressed. With the right hand, press J to move the shape to the left, K to rotate it 90 degrees counterclockwise, or L to move it to the right. Press ; to pause and catch your breath. Press any of the other keys to resume play. When you have the shape in position, press the space bar to drop it rapidly into place (but be careful!).

If you are left-handed, use F to move to the right, D to rotate, S to move to the left, and A to pause. The space bar still drops the shape.

Points are scored for each shape. The higher the shape lands or is dropped from, the higher the score, so it pays to move it quickly into position and then drop it with the space bar. Points are also scored for each line that is formed. The higher the level, the higher the score for each shape or line.

The current level will increase for every 5000 points scored. If you want to increase the level at any time during the game, press U or R. If you want to quit, press Q.

Don't type in the ! and numbers at the end of each line. These are checksums for Tom Freeman's CHECKSUM program.

WARNING ! THIS PROGRAM  
MAY BE HABIT FORMING

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1 REM * COMPUTER BRIDGE *
2 REM * JUNE 1989 ISSUE *
100 DISPLAY ERASE ALL AT(8,1
2):"Tetris" :: DISPLAY AT(10
,3):"(C) 1989 Steven Karasek
" 1140
110 PRINT "STARTING LEVEL (1
-9)":; INPUT E :: E=INT(E):
: IF E(1 OR E)9 THEN 110 ELS
E E=10-E 1248
120 DIM Z$(23),Z(26),A(18,3)
,B(18,3):: RANDOMIZE :: C$="
JKL;UQSDFA" :: Z(24)=4
095 :: CALL MAGNIFY(4):: CAL
L CLEAR :: FOR I=0 TO 6 1003
130 READ N(I),C(I):: CALL CO
LOR(I+8,2,C(I)):: NEXT I ::
FOR I=0 TO 18 :: FOR J=0 TO
3 :: READ A(I,J),B(I,J):: NE
XT J :: NEXT I 1011
140 FOR I=68 TO 143 :: READ
X$ :: CALL CHAR(I,X$):: NEXT
I :: CALL CHAR(41,"FFFFFFF
FFFFFFF")1082
150 FOR I=0 TO 23 :: Z$(I)=R
PT$(I),10):: Z(I)=2049 :: N
EXT I :: V=E :: D,P=24 :: U=
0 :: GOSUB 450 :: CALL VCHAR
(1,12,41,240)1155
160 CALL KEY(O,M,U):: IF W(
) THEN 160 1176
170 P=0 :: Q=4 :: J=INT(RND*
7):: S=J*2 :: J8=J*8+89 :: I
F J)3 THEN S=S-1+2*(J-4)1045
180 GOSUB 470 :: T=0 :: X=1
:: Y=Q*8+81 :: CALL SPRITE(
#1,K,C(J),X,Y)1210
190 IF Z(O)AND 2^(Q+Y1)OR Z
(X2)AND 2^(Q+Y2)OR Z(X3)AND 2
^(Q+Y3)OR Z(X4)AND 2^(Q+Y4)T
HEN 430 1166
200 FOR I=1 TO V :: CALL KEY
(O,M,U):: IF M(0 THEN 350 EL
SE ON POS(C$,CHR$(M),1)+
1 GOTO 350,210,280,230,340,2
50,330,440,210,280,230,340,3
30 1065
210 Q=Q-1 :: IF Z(P)AND 2^(Q
+Y1)OR Z(P+X2)AND 2^(Q+Y2)OR
Z(P+X3)AND 2^(Q+Y3)OR Z(P+X
4)AND 2^(Q+Y4)THEN Q=Q+1 ELS
E Y=Y-8 1037
220 CALL LOCATE(#1,X,Y):: GO
TO 350 1206
230 Q=Q+1 :: IF Z(P)AND 2^(Q
+Y1)OR Z(P+X2)AND 2^(Q+Y2)OR
Z(P+X3)AND 2^(Q+Y3)OR Z(P+X
4)AND 2^(Q+Y4)THEN Q=Q-1 ELS
E Y=Y+8 1036

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240 GOTO 220 1043
250 Y1=2^(Q+Y1):: Y2=2^(Q+Y2
):: Y3=2^(Q+Y3):: Y4=2^(Q+Y4
):: GOSUB 450 :: P=D-X4 1141
260 IF (Z(P)AND Y1 OR Z(P+X2
)AND Y2 OR Z(P+X3)AND Y3 OR
Z(P+X4)AND Y4)=0 THEN P=P+1
:: GOTO 260 1207
270 P=P-1 :: CALL LOCATE(#1,
P*8+1,Y):: GOTO 380 1255
280 S=S-1 :: T=T-1 :: IF T(0
THEN T=N(J)-1 :: S=S+N(J)10
05
290 GOSUB 470 1039
300 IF (Z(P)AND 2^(Q+Y1)OR Z
(P+X2)AND 2^(Q+Y2)OR Z(P+X3)
AND 2^(Q+Y3)OR Z(P+X4)AND 2^
(Q+Y4))=0 THEN CALL PATJERN(
#1,K):: GOTO 350 1248
310 S=S+1 :: T=T+1 :: IF T=N
(J)THEN T=0 :: S=S-N(J)1071
320 GOSUB 470 :: GOTO 350 10
87
330 CALL KEY(O,M,U):: IF W(
) THEN 330 ELSE V=V+(V)1):;
GOSUB 460 :: GOTO 350 1082
340 CALL KEY(O,M,U):: IF W(
) THEN 340 1101
350 NEXT I :: P=P+1 :: IF P+
X4)=D THEN 370 1203
360 X=X+8 :: CALL LOCATE(#1,
X,Y):: GOTO 200 1233
370 IF (Z(P)AND 2^(Q+Y1)OR Z
(P+X2)AND 2^(Q+Y2)OR Z(P+X3)
AND 2^(Q+Y3)OR Z(P+X4)AND 2^
(Q+Y4))=0 THEN 360 ELSE P=P-
1 :: GOSUB 450 1062
380 D=MIN(D,P):: FOR I=0 TO
3 :: W=Q+B(S,I):: M=P+A(S,I)
:: Z(N)=Z(N)+2*W :: Z$(N)=SE
G$(Z$(N),1,W-1)CHR$(J8)ISEG
$(Z$(N),W+1,10)1144
390 CALL HCHAR(N+1,W+11,J8):
: NEXT I :: CALL DELSPRITE(
#1):: FOR I=MIN(P+3,23)TO P S
TEP -1 :: IF Z(I)<4095 THEN
420 ELSE J=I :: M=I-1 1135
400 Z(J)=Z(N):: Z$(J)=Z$(N):
: DISPLAY AT(J+1,10):Z$(J)::
IF Z(J)>2049 THEN J=J-1 ::
M=M-1 :: GOTO 400 1006
410 U=U+INT(500/V):: GOSUB 4
60 :: I=I+1 :: P=P-1 :: D=D+
1 1042
420 NEXT I :: GOTO 170 1090
430 H=MAX(H,U):: DISPLAY AT(
1,20):USING "#####":H ::
CALL DELSPRITE(#1):: GOTO 1
50 1013

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440 DISPLAY ERASE ALL:"HIGH
SCORE IS";MAX(U,H):: END 121
9
450 U=U+INT((24-P)*100/V)107
7
460 DISPLAY AT(3,20):USING "
#####":U :: V=MIN(V,MAX(
1,9-INT(U/5000))):; DISPLAY
AT(3,4)SIZE(2):10-V :: RETUR
N 1162
470 X2=A(S,1):: X3=A(S,2)::
X4=A(S,3):: Y1=B(S,0):: Y2=B
(S,1):: Y3=B(S,2):: Y4=B(S,3
):: K=68+S*4 :: RETURN 1121
480 DATA 2,15,2,7,2,14,1,16,
4,11,4,4,4,5 1067
490 DATA 0,0,0,1,0,2,0,3,0,1
,1,1,2,1,3,1,0,0,0,1,1,1,1,2
,0,2,1,1,1,2,2,1 1128
500 DATA 0,1,0,2,1,0,1,1,0,1
,1,1,1,2,2,2,0,1,0,2,1,1,1,2
,0,1,1,0,1,1,1,2 1127
510 DATA 0,1,1,1,1,2,2,1,0,0
,0,1,0,2,1,1,0,2,1,1,1,2,2,2
1025
520 DATA 0,0,1,0,1,1,1,2,0,1
,0,2,1,1,2,1,0,0,0,1,0,2,1,2
,0,2,1,2,2,1,2,2 1128
530 DATA 0,2,1,0,1,1,1,2,0,1
,1,1,2,1,2,2,0,0,0,1,0,2,1,0
,0,1,0,2,1,2,2,2 1128
540 DATA FFFFFFFF,FFFFFFF,
,OFOFOFOFOFOFOF,OFOFOFOFOF
OFOFOF,,1136
550 DATA FFFFFFFF,OFOFOFOF,,0
000000OFOFOF,,00000000OF
OFOF,OFOFOFOF,FOFOFOFOFOFOF
FO,,OFOFOFOF,FFFFFFF,FOFOF
F,1218
560 DATA OFOFOFOFOFOFOF,,0
000000OFOFOF,FOFOFOF,OFOF
OFOFOFOFOF,FOFOFOFOFOFOF
F,,OFOFOF,FFFFFFF,,0000000
OFOFOF,1049
570 DATA OFOFOFOFOFOFOF,OF
OFOFOF,0000000OFOFOF,,FFF
FFFFOFOFOF,,FOFOFOF,,00000
0000OFOFOF,,FOFOFOFOFOFOF
,FOFOFOF 1200
580 DATA FOFOFOF,FFFFFFF,,0
000000OFOFOF,,OFOFOFOFOFOF
OFOF,OFOFOFOF,FOFOFOF,,FFFF
FFF,,FOFOFOFOFOFOF,OFOF
OFOF,FOFOFOFOFOFOF,FOFOFOF
1148
590 DATA 0000000FFFFFFF,,F
OFOFOFOFOFOF,OFOFOFOFOF
FOFOF,OFOFOF,FOFOFOF,FFFF
FFFFFFOFOF,,FOFOFOF,,OFOF
OF,,FOFOFOFOFOFOF,FOFOFOF
1099

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PRINTERS #1

by John F. Willforth

(SEPT. 1989 PUG)

(ML=MoreLater)

I will not say how far I'll go with this series on printers, only that when NO ONE finds strategically placed ERRORS, I'll assume that either no one cares, or I've lost you all.

I must start out at the beginning. The printer is probably the most common and useful device for a computer. You can do without a disk ( you could store all in memory), and you could do without modems ( some of you could never imagine how), you can even do without a monitor, I've seen people do it. But to take away the printer would be akin to taking away the brush, paint, and canvas from Picasso. Almost nothing that is input to a computer from keyboard, modem, disk, or even a cassette serves a useful purpose unless a "HARDCOPY" of the redesigned, sorted, aligned, deleted, added to, or otherwise corrupted data is created. Even the act of writing the initial program that does all of the above is made easy by making a listing of that program as it develops ( a frequently used aid in debugging ). I know that initially, even more than a disk, I desired a PRINTER.

A printer generally is like me. It takes orders, but can only let you know if it is getting behind in it's work, is hungry, or has died ( so maybe this is the only way for both of us to be missed. A printer is generally a RO. ( Read Only ) device. There are those with keyboards, but those are generally used as hardcopy master consoles on commercial computers so that the business will have a paper trail of all actions taken by the system manager and operators on the system. I would have a very hard time identifying system problems, if a CRT Terminal was used as a master console. The printer is generally interfaced to the CPU through either a SERIAL (RS232) or PARALLEL interface and cable. The T.I. 99/4 and /4A using a P.E.B. RS232/PIO card can drive either interface. The old T.I. interface was first the TP (we won't discuss here), and then the dual-RS232 Stand-alone. I know that a limited number of them were produced, and that some companies like CORCOMP, MYARC, BOXCAR, and others produced a variety of cards for this purpose.

The printer receives the data to print if it is READY:

- \* ON-LINE and POWERed up.
- \* The printer buffer (if it has one) is NOT FULL. The printer will usually print slower than data will be sent. Today's printers generally have 1K, 2K, 4K, 6K, 8K or even larger BUFFERS within themselves to allow data to flow at a faster rate to the printer than it can actually be printed. ML
- \* NOT OUT OF PAPER!

The printer can only let the CPU know when it is behind in it's work, or out of paper in a serial printer hooked to the RS232 port, this is accomplished with a HARDWARE BUSY signal from the printer CTS (Clear to Send) pin 5 to DTS (Data Set Ready) pin 20 on the RS232/PIO card. In otherwords when the printer can not accept any more control or data from the CPU logic in the printer changes CTS to NOT CTS, this in turn is INPUT to the RS232/PIO card as NOT DTR, and the flow of data stops until the printer catches up (just by printing one line), having the new paper installed, or the OFF/ON LINE status changed to ON LINE (Ready). These three conditions are NORMAL and occur often even when you don't think about it.

If the printer is PIO (the most common) all of the above conditions apply, but the method is slightly different. When the printer is BUSY it OUTPUTS a signal on pin 11 (BUSY) [High at +5v.] more directly NOT GROUND to the PIO port on the RS232/PIO card pin 10 called HANDSHAKE IN. The flow of data will be stopped.

If you do not have the cable for the SERIAL or PARALLEL (PIO), printer made as it should be to control data flow, you may print a page or two but eventually characters of data or control will be lost.

## PUG PERIPHERAL

Since TI didn't like convention, they made TRANSMIT on the SERIAL port, pin 3. RECEIVE must therefore be pin 2. When you hook up RS232 ports on other types of equipment, you usually have to cross pins i.e.: 2 to 3 and 3 to 2 so the mouth of one speaks to the ear of the other and visa versa. Not TI! No! pin 2 goes to pin 2 and pin 3 goes to pin 3. On the PARALLEL port to the RS232/PIO card, they did even more dirt. They chose a 16-pin connector that is so rare that God threw away the pattern. But the signals that do arrive there are acceptable to the PIO convention. The only real problem here is with STROBE (the signal that tells the printer when to look at the eight data lines for a good character), and polarity appears to be the major problem, the problem lying with a few printers, not TI. In case you didn't know it, the PARALLEL (PIO) interface sends to the printer much faster than SERIAL (RS232) because the entire 8-bit byte of data appears at the printer in one time frame, while it is spelled out one bit at a time to the printer.

As you can tell, I'm dealing with the interface cables for your printer this month. If you can't get the printer to run on your TI, then you won't be able to keep up. Below are two cable configurations that should work, and cause the flow of data between your TI and the Printer to be smooth, and complete. (Remember, there are printers that will give you trouble because of "NON-STANDARD", [whatever that is] protocol, strobe or data polarity, timing, etc.)

The SERIAL (RS232/1) cable:

	TI end	Printer end	
GROUND	7	7	GROUND
REC. DATA	2	2	TRANS. DATA
TRANS. DATA	3	3	REC. DATA
DTR	20	5	CTS

The SERIAL (RS232/2) cable:

	TI end	Printer end	
GROUND	7	7	GROUND
REC. DATA	14	2	TRANS. DATA
TRANS. DATA	16	3	REC. DATA
DTR	19	5	DTR

The PARALLEL (PIO) cable:

	TI end	The Printer end	
STROBE	1	1	STROBE
DATA 0	2	2	DATA 0
DATA 1	3	3	DATA 1
DATA 2	4	4	DATA 2
DATA 3	5	5	DATA 3
DATA 4	6	6	DATA 4
DATA 5	7	7	DATA 5
DATA 6	8	8	DATA 6
DATA 7	9	9	DATA 7
READY	10	11	BUSY
GROUND	16	16	GROUND

(optional) ground 19 thru 30

If you can't get your printer to run with one of the cables indicated above, I can give you some suggestions, but I won't be reprinting these special cables in this series.

In PRINTERS #2 we'll start with the commands that are sent to printers to make them do what they do. This is one of the most interesting things that we'll get into in this series. This therefore will not be a hardware only series. I wanted to get into printers because this is the one peripheral that everyone of you can really make perform, and to do it takes some understanding of hardware, but even more understanding of printer commands.

PS: The Parallel interface on the TI RS232/PIO card is BI-DIRECTIONAL. This is significant for those of you who are looking for a high speed INPUT/OUTPUT port for the TI. You just have to control the reading of this PIO port. Maybe you can find something in the Editor Assembler manual on this. Why not look into it? ML

# EIN-DAY

**FunnelWeb / TIW**  
By Martin Smoley - NorthCoast 99'ers  
NorthCoast 99'ers - January 1, 1989

## The Very Beginning!

So, you've had your PE Box for two days and you managed to get it working OK. But, you have a floppy disk of FunnelWeb stuff and you don't know how to get the instructions off the disk. And what is a floppy anyway?

Let's start with the floppy. Most people start out with one Single Sided Single Density (SS/SD) disk drive. The kind that originally came with the PE Box. This drive can only read or write data on one side of the disk. But disks have two usable sides, so the library punches two extra holes in the disk jacket so the drive thinks that the other side is another disk. This allows you to put a full (SS/SD) disk on one side, flip the disk over and put a full (SS/SD) disk on the other side. With the FunnelWeb disk most of the programming has been put on one side and the instructions are on the other side.

I am assuming you have an Extended Basic Cartridge and that you have a working printer attached to the system.

Turn on your system. I normally turn on the monitor, the printer, the PE Box and the console, in that order, and turn off in the reverse order. The first thing you should see is the TI intro screen. Press the space bar once and you should see a screen that says press 1 for Basic and 2 for IBasic. Place the FunnelWeb disk into the disk drive and close the drive door. Then press number 2 for IBasic. If you're lucky the disk will make several noises and in a couple of seconds you will see the FunnelWeb (FW) intro screen. If the screen says "Ready", the disk is probably in upside down. If you got the "Ready", type the word BYE and press Enter (E). From now on (E) will represent (Press Enter). This should take you back to the TI Intro screen. Open the drive door, take the disk out, turn it over, put it back in, close the door and press the spacebar and press 2 for IBasic again. On one side or the other you should get the FW intro screen. If not, you better get some help. When the FW intro screen does appear, press any key to get to the next screen. The next screen says 1 TI-Writer, 2 Edit/Assa, etc. Press 1 for TI-Writer. The next screen says 1 EDITOR, 2 FORMATTER, 3 DM-1000, etc. If you press the spacebar, the screen will change to 1 EDITOR, 2 ASSEMBLE, 3 LOADERS, etc. We want the first screen so press the spacebar again and it will return. The second screen is for E/A programming. Until you get the hang of it, look for the FORMATTER or DM-1000 to tell you that you have the right screen. Then press 1, for EDITOR, and wait a few seconds while the Editor loads from the disk. If all went well you will now see the editor screen before you. You will see FW's name etc. across the bottom of the screen. Near the top left will be 0001, with EoF under it, with a line of numbers leading off to the right and at the very top of the screen you will see Edit, Tab, Files, Lines, etc. etc. At this point the cursor is on the Command Line, which is located above line 0001 and below the Edit, Tab, Files, etc. line. This line is used to tell FW what you want it to do. Reading the top line will tell you what your options are. Let's print your name. Type E for Edit and (E). You will jump to line 0001 and the top line will

disappear. Type in your name and (E). After (E) the blinking cursor drops to line 0002 and waits for more input from you. Hold down the FCTN key and press 9. This will get you back to the Command Line. "Your printer should be on." Press F to place an F on the Command Line and (E). This will give you new Command Line that says LoadF, SaveF, PrintF, etc. No press PF, for PrintFile, (E). You will then see RS232.BA=4800. If you think this is right for your printer, (E) will print your name. If you have a serial port, but the speed is too fast, FCTN ARROW over to the 4800 and type 300 over it, the (E) to print. If you use PIO for your printer, type PIO over RS232 and FCTN 1 to delete everything else on the line, the (E) to print. One of these commands should work for your printer. The printer will print your name, and the cursor will suddenly appear on line 0002 under your name, waiting for more input from you. "OK", forget your name, let's get to work. Turn the FW disk over. Press (FCTN 9) to get to the Command Line. Press F then (E) for File Commands. Now press (FCTN D) to arrow right until you can see the end of the printed line o ShowDirectory: ah-ha, there's more stuff over there. Now (FCTN S) to arrow left to the beginning of the line. Type S for ShowDirectory and (E). When FW asks you for the disk number, enter 1 and (E). FW will now look at disk drive on and display the Directory. When the Directory comes up, you available commands are at the bottom of the screen. What I'm trying to tell you is that whenever there are commands available to you, they will be posted somewhere on the screen. If you got your name to print out previously, then FW still has your printer info. Therefore, at this point if you press P you will get a printout of this Directory, which is a good idea. ~~will page forward and B will page back through the Directory~~ The number of pages will be in the upper right corner, with the current page number. "Try it." When you're done, Black up to page 1 for the file named -READ-ME. Press 1 to Mark -READ-ME and then (E) to get back to the Command Line. Now type LF (E) to get straight to Load File and DSK1.-READ-ME will appear on the Command Line. Press (E) and Load the -READ-ME file. When it has loaded it will pop up on the screen and you can move around using the arrow keys to read or examine it. You can also print it out with FCTN 9, PF (E) and (E), provided you PIO, etc. is set. "However!" The FW documentation is set up for the FORMATTER and that will give you the best results, so let's use the FORMATTER. Press FCTN 9, 0 (E), E (E). This should get you back to the screen with 1 EDITOR, 2 FORMATTER etc. Turn the disk over and then press 2 for FORMATTER. The FORMATTER will then ask you for the disk number and name of the file. Turn the disk over again and type in DSK1.-READ-ME and (E). FW will check the disk to see if the file is there. Next it asks for your printer setup. Type in PIO.LF or whatever worked before, but this time you need the .LF on the end. FW will ask you 4 more questions. Just press (E) each time and suddenly your printer will start printing like crazy. If you do not like something, pressing FCTN 4 will stop the print. You can then press (E) and select 2 from the screen for FORMATTER. The FORMATTER is still loaded and will come up immediately. Also FW will remember all of your previous answers, so you can just press (E) for all except the one you want to change. You can use the FORMATTER to print out all the FW Docs by merely changing the filename each time that question comes up and press enter for all the rest. If this page help you get at the instructions, you'll be on your way from there.

Good Luck. Marty.

GOOD NEWS ABOUT THE

# BIN-DAY

FunnelWeb/TIW2  
By Martin Smoley - NorthCoast 99'ers  
NorthCoast 99'ers - March 12, 1989

Bytemonger May 89

## FunnelWeb/TI-Writer Help Sheet

### Phase Two!

Last issue I gave you the basics on how to get into your FunnelWeb disk. If you have been using the disk for a while, you are probably ready for the information on this page. I copied the TIW Helper sheet from the QB Monitor newsletter because it was convenient, even though I was already using the commands from the original TI-Writer manual. If you are just getting started and you use wordprocessing a lot, you should try to pick up the original TIW manual. They are cheap and well worth the money. I am presently using FunnelWeb version 4.13, but I still use the TIW manual. FunnelWeb has many improvements over TIW which I use almost every time I write a letter. The most useful functions come with SD for Show Directory. To use SD press FCTN 9, then SD <ENTER>, and last the drive number desired. FunnelWeb will place a directory on the screen and allow you the use of the following commands.

<B>ack <V>iew PgCk(=) Mark(1-0)  
<N>ext <P>Dir <O>ld <D>elF Exit<ent>

Only ten items are shown on the screen at one time. The current page or screen number and the total number of pages will be shown in the upper right corner of the screen. For example, Page 1 of 5, Page 2 of 5, etc. Pressing N will move you to the <N>ext page and pressing B will move you <B>ack one page. Pressing a number from 1 through 0 will mark that file with a dash (-). You can move the dash by pressing another number or retain a previously selected file by pressing 0 for <O>ld file. If you select a file <1-0> and then press enter, you will be returned to the letter you are currently editing. If you then utilize LF or SF, the selected name will appear as the Load or Save File selection. While using the Show Directory utility you can <V>iew or <D>elete a file from the selected disk drive or you can do a Program Check. If the <=> key is pressed for PrCk(=), FunnelWeb will again search the selected disk drive and attempt to identify the types of files on the disk. For example, EA for Editor Assembler, BX for Extended Basic, etc. The result of this search will not only be shown on screen but will print out if you press P for Print Directory. These functions will all work while you are working on a letter, and if you do not Load another File (LF), your current work will still be there when you are finished with the SD functions. Note: If you are in the SD mode with a directory on the screen and press FCTN 8, REDO, FW will immediately do another directory of the same drive. This is great for library work. **Good Luck. Marty.**

===== EDITOR COMMAND :FCTN:CTRL: EDITOR COMMAND :FCTN:CTRL: EDITOR COMMAND :FCTN:CTR =====

Back tab : : T !Ins. blank line : B : 0 !Quit : = :  
Beginning/line : : V !Insert character: 2 : 6 !Reformat : :2or  
Command/Escape : 9 : C !Last paragraph : :6orH!Right arrow : D : C  
Delete character: 1 : F !Left arrow : S : S !Roll down : 4 : A  
Del. end of line: : K !Left margin rel.: : Y !Roll up : 6 : E  
Delete line : 3 : N !New page : :9orP!Screen color : : 3  
Line #'s on/off : 0 : !New paragraph : :8orM!Tab : 7 : 1  
Down arrow : X : X !Next paragraph : :4orJ!Up arrow : E :  
Duplicate line : : 5 !Next window : 5 : !Word tab : :7or  
Home cursor : : L !Oops! : : !orZ!Word-wrap/fixed : : 0

===== FunnelWeb UPPERCASE to lowercase (CTRL .), lowercase to UPPERCASE (CTRL ; =====

Load LF (enter) DSKn.FILENAME (Loads the entire file)  
Files LF (enter) 3 DSKn.FILENAME (Merges entire filename with data in memory after line 3)  
Note: LF (enter) 3 1 10 DSKn.FILENAME (Lines 1 thru 10 of filename are merged after line 3 in memory)  
n = 1-9 LF (enter) 1 10 DSKn.FILENAME (Loads lines 1 thru 10 of filename)

===== Save SF (enter) DSKn.FILENAME (Saves entire file to DSKn) Files SF (enter) 1 10 DSKn.FILENAME (Saves lines 1 thru 10 to DSKn) =====

Print PF (enter) PIO (Prints text to a parallel printer) Files PF (enter) C DSKn.NAME (Prints text to disk W/O control characters) PF (enter) L PIO (Prints 74 columns of text with line numbers) PF (enter) F DSKn.NAME (Prints to disk in Display/Fixed 80 format) PF (enter) 1 10 PIO (Prints lines 1 10 to the parallel printer)

Note: PF can be used to print to disk (DSKn.NAME), RS232.BA=300, or PIO.CR.LF To cancel printing hold FCTN 4

===== Delete D (enter) 10 20 (deletes lines 10 thru 20 from memory) =====

Delete File DF (enter) DSKn.FILENAME (Deletes the named file from disk n

===== Tab/Margins T (enter) L=Left margin R=Right margin T=Tab I=Indent Use (enter) to execute or FCTN 9 to escape and terminate the "T" command =====

Recover Edit RE(enter) answer (Y) or (N) to recover what you have just purged

===== Move (line) M (enter) 2 2 10 (moves line 2 to after line 10) M (enter) 2 6 10 (moves lines 2 thru 6 to after line 10) =====

Copy C (enter) (works just like the Move command, above)

===== Find FS (enter) /string/ (looks for entered string in text following the location of the cursor when FS was begun) FS (enter) 1 15 /string/ looks for the entered string in lines 2-15 =====

Replace RS (enter) /old string/new string/ Replaces the old text with the data in the new string

===== Show (FWB) Directory SD (enter) DSK# (displays a directory of desired disk drive) =====

Show Line S (enter) Line# (moves cursor to desired line, E=last line)

===== Courtesy of MADHUG U6, Lehigh 99'er U6, QB-99'ers U6 and FunnelWeb Docs.



NOVEMBER 14, 1989 HAPPY THANKSGIVING !!!

MUNCH OFFICERS AND NUMBERS (all in 508 area unless noted)

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Treasurer	Jim Cox	869-2704
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Library	Al/Lisa Cecchini	
Disk Librarian	Lou Holmes	617 965/3584
Tape Librarian	Walter Nowak	413 436/7675
+++++++	Jack Sughrue	476/7630

OCTOBER MEETING. President Corsin Wyman called the meeting to order at 7:00 P.M., there were 13 members present. Everyone was very glad to see Jack Sughrue at a meeting again. Jack looked great and picked up right where he left off. Jack demoed the disk of the month which included the Writer Aids utilities and the MUG loader. Corsin showed a video tape which demonstrated computer generated, high-res graphics; and he also had a tape of Lou Philips announcement of what was to become thee Geneve. Theree was also a tape of Peter Hoddie playing the cello accompanied, of course, by computer.

NOVEMBER MEETING. I am not sure of exactly what is planned for this month, but I am sure it will be an interesting one.

RAFFLE. Each month we have a raffle and the dollar donation per ticket helps to cover the monthly fee to rent the hall. This month's raffle will have the winner's choice of programs from Norton Software, which were donated to us by the Video Connction.

MONTHLY SALES. At each meeting you have the opportunity to buy and/or sell new or used hardware, software, books and original programs. Please have prices marked on any items you have to sell.

LIBRARY NOTICE. Please return any items borrowed from our library. If you can not come to a meeting or give these items to someone who will be at the meting, please mail any library items to the group address which is listed on the cover of this newsletter. There are no late fees, we don't care how long they have been out, please return these items.

REPRINTS. Reprints of any items in this newsletter is permitted as long as credit is given to M.U.N.C.H.

ARTICLES. I am always looking for articles for this newsletter, anything which interests you will probably interest other members of the TI community, so please share your ideas and opinions with all of us.

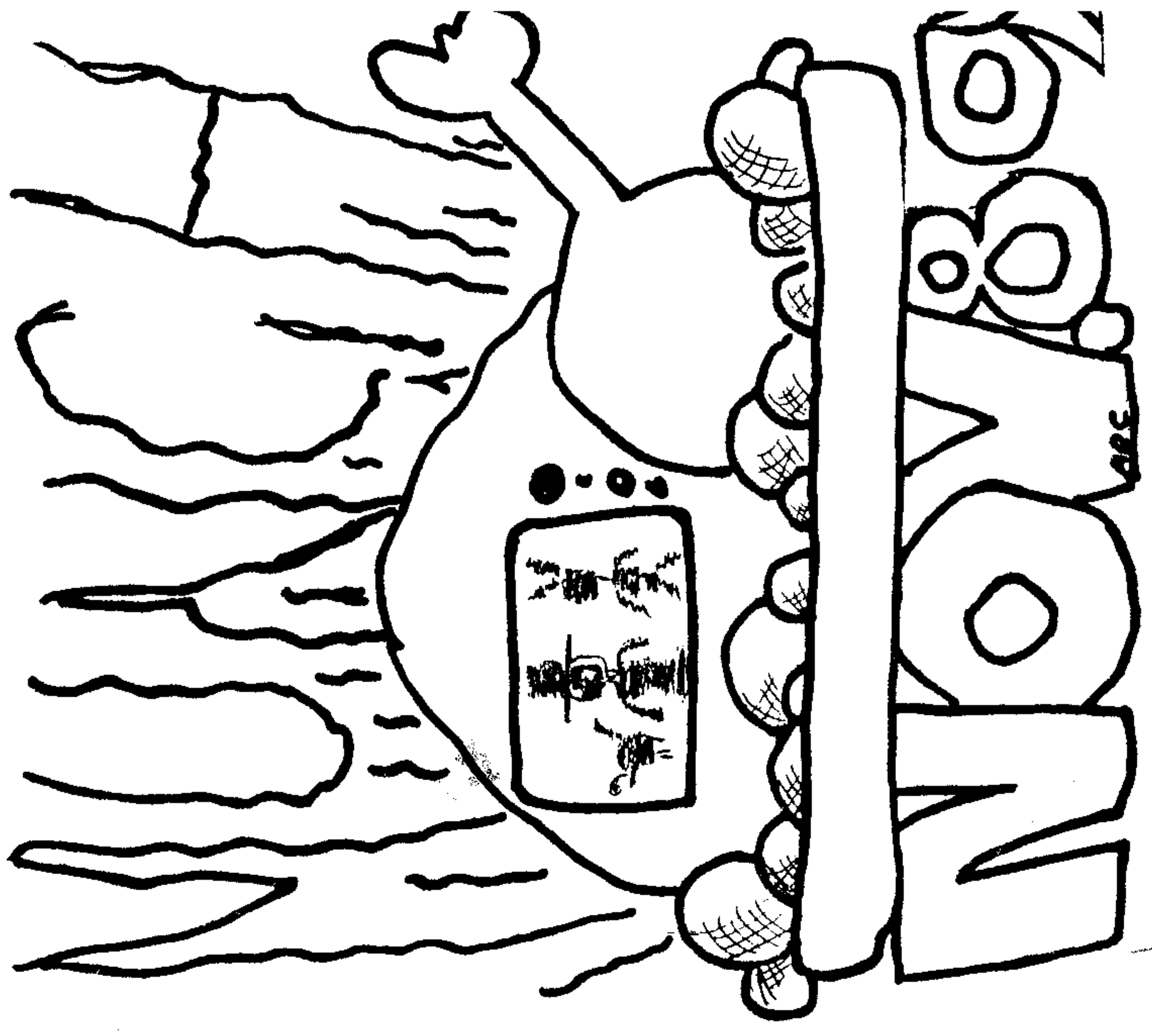
NEWSLETTER EXCHANGE EDITORS. Please note our corrected address on the front cove of this issue.

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Mass Users of the Ninety-nine and Computer Hobbyists  
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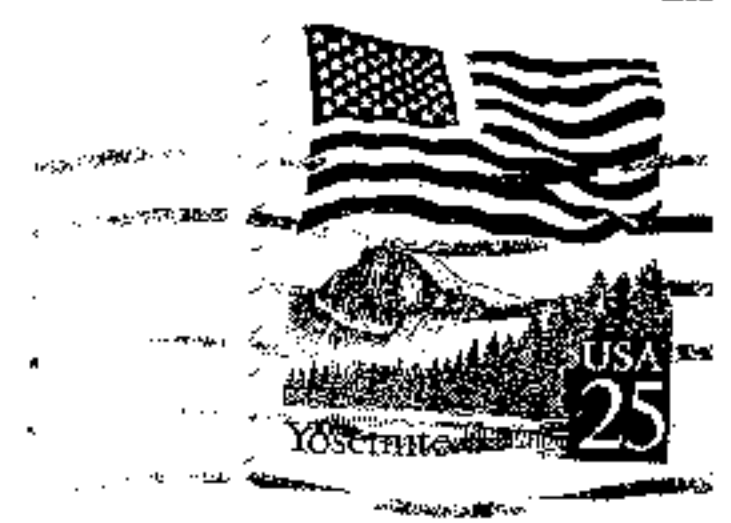


### JOIN THE CROWD AT OUR NOVEMBER 14 MEETING ###

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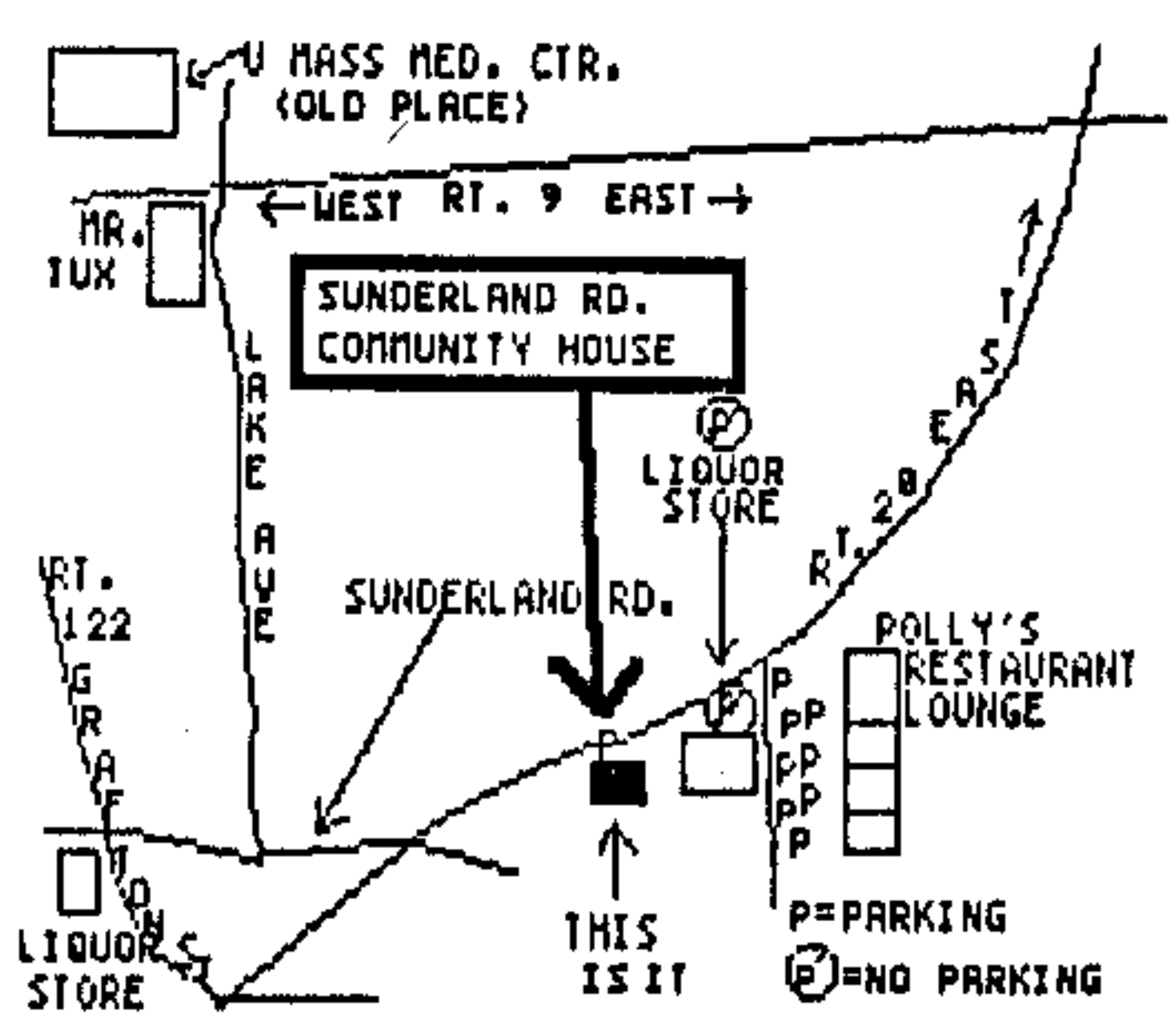
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Next Meeting NOVEMBER 14th.



POSTMASTER: Forwarding and Address Correction Requested.