N U T I N E W S

* N I T T A N Y U S E R S O F T E X A S I N S T R U M E N T S *

D. Snell, Pres. (Actg) APRIL 1991 M. Villano, Ed.

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ARTICLES BEING FEATURED THIS ISSUE:

LOCAL NEWS, INFO NEXT MEETING DATES

Nobody visited the *Roselle Park, NJ Fair*. We also did not participate in *PSU MIEC Fair* due to manpower problem. Let's get our act together! NEXT MEETINGS: Saturdays, April 20th & May 18th, at 104 Steidle Bldg.. Dave Snell will lead us in disassembling our TI-99/4A's for cleaning & minor repair. Bring along an old, unused console and join in the fun.

RAVE EXPANSION BOX ARRIVES: Highlighted this month is a review of the new *RAVE 99 PS/2A Professional Expansion Box*. I could NOT possibly improve on *Dave Ratcliffe*'s description, so it is reprinted here in its entirety. To add briefly to what *Dave* has said, the unit is attractive and larger than a TI PEB but with smaller footprint than my AT clone, fans are HALF the decibels, and runs VERY cool considering the heat produced by MyARC cards. Indeed, while modifying my cards, *John McDevitt* noted scorch marks on the Geneve and HFDCC, so PS/2A should EXTEND their life. Slots I put cards in are: 1 MYARC FDC, 2 MEMEX 504K, 3 MYARC HFDC, 4 RAVE SPEECH, 5 TI RS232, & 6 the GENEVE. The Speech card functions normally, but the MEMEX doesn't complete its memory mapping when the test program is run; however, it does not lock up the computer, and so far see no degradation of memory or operation. Installing drives was EASY: KALOK 20mb 3.5' hard mounted vertically in a hidden bay; two TEAC 36CK 5.25" floppies mounted horizontally in the top slots on front panel (can house 3rd at bottom w/Y split of a power lead), & CHINON 3.5" 720K floppy in a vertical cut-out on front panel. The problem of card wobble (without clamshells) was temporarily solved by securing them with small plastic cable ties using perforation holes on the cards and card slot guides. NOT very elegant but is effective. Only problems remaining are I get no Reswitch button function (harness was installed on Geneve by John), and the Power LED does not light up. I will phone up *RAVE 99*, and trust this will be cleared up *in a jiffy*. *Chip Chapin*, our ex-prexy currently working in Washington DC, has also gotten his PS/2A, and plans to get it up and going in the near future. *To sum up, I concur wholeheartedly with Dave's evaluation! 4 STARS****

The RAVE PS/2 Expansion Box: A RAVE Review (*sorry, couldn't resist*)

by Dave Ratcliffe
Harrisburg, Pa.
CPUG Newsletter
Central Pa. 99/4A Users Group

At the 1990 TICOFF show, lots of people crowded around the RAVE99 table to get a 'first look' at the proposed RAVE PE/2 expansion box for the TI-99 and Geneve computers. What we saw was a prototype, set up to run a TI-99 and what a wonderful sight it was. NO console, (Rave Keyboard Interface and computer ordered then and my order was submitted in April. Even though I did NOT receive the unit till January 1991), I am still VERY satisfied. Why? Because every step of the way, Rave's owner, John McDevitt, kept me informed of progress and setbacks. I knew going in that I was buying an as yet unfinished product and the manufacturers openness through the whole process was both refreshing and welcomed. This is the second product I've purchased from Rave (keyboard interface was the first) and I have yet to be disappointed. Now on to the "official" review.

There are 2 versions of the RAVE PS/2, the A and B series. I purchased the A series, designed for the Geneve computer. The B version allows for the use of both the TI/99 and Geneve computers IN THE SAME BOX, or just the TI alone. Since mine is for a Geneve, the following description is of the PS/2-A version except where noted:

The cabinet is made by Magitronics and contains a 200 watt fully regulated power supply. There is room for 3 5.25" 1/2-height drives and 1 3.5" floppy drive all in externally accessible drive bays. The 3.5 floppy space is NOT available if the Rave keyboard interface is used (PS/2-B version). The 5.25" area can hold 1 full height and 1 1/2 height if desired. Additionally, there is internal space for a vertically mounted 3.5" hard drive behind the front panel and adjacent to the 5.25" bay. Let me assure you, the power supply is fully capable of running ALL of those devices as well as the CPU and all related cards. While the power supply contains a cooling fan, Rave saw fit to install a second fan in front of the card rack that moves air directly across the expansion cards providing extra cooling capacity.

The card rack is a well designed unit and even includes a removable section to make room for the internal 3.5" hard drive. The backplane shows good design and workmanship and all the jumpers are laid out well with easy access. I had note here, while the documentation refers to numbered pins at the jumper selection points, NO numbers are printed on the board. After a quick call to John I found out that the pin closest to the front is ALL jumper locations is pin no. 1. For the Geneve, there is a small wiring harness that requires a bit of soldering to install. It will connect the front panel reset switch to the Geneve card to provide a HARD reset when needed. An additional connection provides for use of the front panel KEYLOCK switch.

The backplane comes with 5 16 bit slots (no.'s 1, 2, 6, 7 and 8) and 3 8 bit slots (no.'s 3, 4 and 5). There is a reason for this. You have the option of removing your cards from the clamshells or leaving them in. If you choose the latter, you'll need to use slots 3, 4 and 5 since the clamshells have no opening for the extra connectors in the other positions. Those 3 positions CAN be made into 16 bit if desired. I purchased the extra connectors with my unit but have not installed them yet. One note here. At present, there exists no hardware to utilize the full 16 bit backplane. This is provided as a possible expansion route for the future.

The front panel contains 2 push button switches, 1 keylock switch and 3 LED's. The 2 buttons are RESET (obvious purpose) and TURBO (inactive with Geneve, used to PAUSE the CPU in the TI version). The keyswitch is used to disable the system when locked. 2 keys are provided with the unit. The TURBO LED (yellow) indicates bus activity. Since all cards are in the BACK of the box, there is no way to see their respective activity lights. This LED is a suitable replacement. The HDD LED (red) indicates hard drive activity. A pigtail with plug is provided to connect this to your hard drive. The power LED (green) serves an obvious purpose. The power switch is at the lower right front corner of the box.

The rear apron contains the openings for the card rack, a jack for the AC line, a jack for running power to a monitor, a 110/220 VAC selector switch, the power supply cooling fan and 2 knockouts for DB-25 and DB-9 connectors (not used).

With the exception of the front panel, the ENTIRE box is heavy guage steel and VERY rugged. There are 4 rubber feet attached to the bottom. Dimensions of the entire unit: 7" H x 15" W x 16 1/4" D.

Many existing expansion cards will have to be modified for use in the RAVE expansion box but the mod is VERY simple and requires only 2 solder joints per card and a bit of wire. Here's the explanation. The TI Pbox was a power monster. It put out WELL over the 12 volts needed by the cards. In order to keep the cards from self-destructing, the manufacturers installed voltage regulators on their cards to hold the incoming voltage at 12. The excess voltage was bled off as heat. The RAVE box uses a tightly regulated supply that requires no such extra regulation. Extra regulation can, in fact, cause minor problems. So, a jumper is installed across the existing regulator to take it "out-of-circuit." Cards modified this way CANNOT BE USED IN A TI PBOX UNTIL THE MOD IS REMOVED! Removal, however, is as simple as cutting a wire. The manual contains adequate descriptions of how to do the mod and what to look for as well as a list of cards that DO require the change.

Now comes the critique. Internally, the unit is well laid out with plenty of room for running cables and maneuvering. Airflow is adequate for keeping things cool. The Box, while a bit large compared to the TI Pbox, is attractive. My documentation for the unit is admittedly preliminary and John tells me it will be improved so I'll skip over that.

I have only one nit to pick with RAVE. The manual recommends the removal of the clamshells around cards to help them remain cool. Unfortunately, the clamshells are also used to hold the cards in place in the card rack. Without the clamshell, the cards tend to wobble in the edge connectors. With nothing inside the cover to hold the cards in place and nothing to keep them from moving sideways, it is possible for a card to come partially out of the socket with disastrous results. This is more of a danger to cards with cables connecting them to the outside world, like Geneve's and serial cards. My solution was to glue 2 strips of resilient foam inside the cabinet cover, OVER the edge connectors and perpendicular to the cards. This effectively HOLDS the cards in their sockets and keeps them from moving sideways as well. Since I set my PBox up in a 'Tower' configuration, this modification was doubly necessary. I sent John a sample of the material I used in hopes that he will add it to future versions.

I have been asked how much I paid. My answer is that it is no longer a valid price. I paid for the unit in April of '90. SEVERAL modifications and upgrades have since been made to the initial design that have changed the price upwards. Those of us who pre-paid were locked in with no further charges. For an accurate CURRENT price, contact

RAVE99 Co.
112 Rambling Road
Vernon, CT 06066
John McDevitt AFTER 7pm: (203)871-7824

Finally, the grade. I can't grade the documentation properly since what I received was VERY preliminary. On that basis, I'd say:

Documentation - B+

On the PS/2A, taking into account workmanship and functionality, I'll say:

Product - A

On RAVE's customer relations, counting willingness to communicate, honesty and willingness to listen, a definite:

Customer Relations - A+

Do I like what I got? Yes. Would I recommend it to others? Yes. Was it worth the wait? YES!

>> DAVE <<

TIPS FROM THE TIGERCUB

No. 62

Tigercub Software
156 Collingwood Ave.
Columbus, OH 43213

Dec. 1990

My stock of Tigercub Software catalogs is depleted and it would not pay me to reprint it. Therefore I have released all copyrighted Tigercub programs, except the Nuts & Bolts Disks, for free distribution providing that no price or copying fee is charged. All of my Tigercub programs have been added to my TI-PD library and are cataloged, by category, in TI-PD catalog #4.

My three Nuts & Bolts disks, each containing 100 or more subprograms, have been reduced to $5.00. I am out of printed documentation so it will be supplied on on disk.

My TI PD library now consists of [illegible] disks of fairware (by author's permission only) and public domain, all arranged by category and as full as possible, provided with loaders by full program name rather than filename, Basic programs converted to XBasic, etc. The price is just $1.50 per disk(!), post paid if at least eight are ordered. TI-PD catalog #4 listing all titles and authors, is available for $1 which is deductible from the first purchase.

According to Charles Good, running a program containing CALL SAY on a beige console without the speech synthesizer attached will cause a lockup.

On a black and silver console, there is no lockup but program execution can be greatly delayed. To avoid that, CALL PEEK(-28672,@) at the beginning of the program and add IF @=96 before each CALL SAY (remember that, IF causes program execution to skip to next program line if not true!), or IF @<>96 THEN to skip over the CALL SAYs.

In Tips #60 I presented a routine to find the lowest power of 7 which contains six 7s in sequence. My version took 24 minutes to find the answer on my TI-99/4A. Several users tried this on a Geneve. The NUTI News of the Nittany UG, Oct 1990 reports that on a 9640 (MDOS 0.97H) with TI XBasic loaded through GPL (speed 5) it ran in 11 min. 33.86 seconds, and with MYARC Advanced Basic V2.99A loaded through GPL it ran in 4 min. 58.62 seconds!

Now, from the TI*MES of England, here is a method using a level of math beyond my comprehension that will solve the problem on an ordinary TI in 6 minutes and 17 seconds!

```
100 ! FASTER WAY John Seager
110 CALL CLEAR :: DIM ELEM(2
6):: ELEM(0)=7 :: POWER,SS=0
 :: DISPLAY AT(1,1):"7 TO TH
E POWER OF"
120 ELM=SS :: SS,CARRY=0 ::
POWER=POWER+1
130 DIS$=STR$(ELEM(ELM)):: F
OR I=ELM-1 TO 0 STEP -1 :: D
IS$=DIS$&RPT$("0",10-LEN(STR
$(ELEM(I))))&STR$(ELEM(I))::
 NEXT I
140 DISPLAY AT(1,19):STR$(PO
WER);"=": : :DIS$
150 FOR I=6 TO LEN(DIS$)STEP
 6 :: IF SEG$(DIS$,I,1)<>"7"
 THEN 190
160 FOR J=I-5 TO I :: IF SEG
$(DIS$,J,6)<>"777777" THEN 1
80 ELSE DISPLAY AT(24,1):"AN
Y KEY TO CONTINUE"
170 CALL KEY(0,K,S):: IF S=0
 THEN 170 :: DISPLAY AT(24,1
):: J=I
180 NEXT J
190 NEXT I
200 ELEM(SS)=ELEM(SS)*7+CARR
Y :: IF ELEM(SS+1)=0 AND ELE
M(SS)<1.E+10 THEN 120
210 CARRY=INT(ELEM(SS)/1.E+1
0):: ELEM(SS)=ELEM(SS)-CARRY
*1.E+10
220 SS=SS+1 :: GOTO 200
```

And if you think that is fast, the Autumn '90 edition of TI*MES contains a Mini-memory program to solve the program in 7 SECONDS! and an assembly version that will search to the [illegible],000 power and find [illegible] strings of six 7's in an hour and a half.

Here's a puzzler for you. Can you figure out why that 1000-millisecond CALL SOUND is cut short?

```
100 CALL CLEAR
110 DISPLAY AT(12,1):"Filena
me DSK" :: ACCEPT AT(12,14)
BEEP:F$
120 ON ERROR 130 :: OPEN #1:
"DSK"&F$ :: END
130 GOSUB 140 :: RETURN 110
140 CALL SOUND(1000,110,0,-4
,0):: DISPLAY AT(24,1):"CAN'
T OPEN FILE" :: RETURN
```

I recently programmed a diskfull of gospel songs, and in each one I used this formula to set up an array containing the frequencies for 3 octaves:

```
DIM N(36) :: F=110 :: FOR J
=1 TO 36 :: N(J)=INT(F*1.059
463094^(J-1)+.5):: NEXT J
```

At the end of each selection I put CALL INIT :: CAL

L LOAD(-31961,149) I don't remember where I learned that one, but it clears the screen, sets all colors and characters to default, deletes sprites, and looks for a LOAD program on DSK1.

The LOAD program has a routine to play each song one after another, but one song crashed with a BAD VALUE error even though it had previously been OK. I found that this was the only song that actually used N(1). The value should have been 110 but it had somehow changed to 24263 which the program line multiplied by 2, therefore out of range.

I found that the routine was correctly giving N(1) a value of 110 the first time but after the CALL LOAD it always had the 24263 value. Substituting other values for 110, I found that any value was being multiplied by 220.5727273, rounded off.

Further experimentation revealed that the problem was being caused by the ^ (exponentiation sign, shift 6 on your keyboard, in case someone prints this through the Formatter!). So I wrote this little routine to experiment with:

```
100 FOR J=1 TO 10 :: PRINT
2^J :: NEXT J :: CALL INIT
 :: CALL LOAD(-31961,149)
```

I saved that as DSK1.TEST and then wrote another one

```
100 RUN "DSK1.TEST", saved
```

that as DSK1.LOAD, and then entered RUN "DSK1.TEST".

It printed out the proper values time after time, so I changed the 2^J to read 2^(J-1). The first time around, the first value was 1 as it should be - the computer will consider any number to the power of 0 to have a value of 1. But, the next time around, the first value was FC.57000101 !

That was not even a valid numerical representation, so I changed the formula to 2^(J-1)#2, expecting it to crash. Instead, it gave me a value of 441.140002 !

Further experimentation showed that 2^(J-1)+1 gave a value shown as 1<1.570001.

Charging the +1 to +10 gave 1=0.570001 and to +100 gave 2<0.570001 !

So, poking a value of 149 into -31961 will cause any number taken to the power of zero to have a value of 220.5727273, which will be represented on screen in some apparently undocumented format - it's not even radix 100. I wonder if the fellows who built this computer could explain that!

ATTENTION all newsletter editors! If you print the above through the Formatter PLEASE transliterate the caret sign!

This one requires the TE:I module and the Speech Synthsizer. Want to make the computer so mad it will fuss and fume and cuss and mutter? Run this program and answer the prompt with 1.

```
100 CALL CLEAR
110 OPEN #1:"SPEECH",OUTPUT
120 INPUT X
130 PRINT #1:"//"&STR$(X)&'
"&STR$(X*3.17)
140 PRINT #1:"THIS IS THE SE
CRET METHOD OF MAKING THE CO
MPUTER SPEAK IN A WHISPER"
150 GOTO 120
```

Want to make it whisper to you? Answer the prompt with 0 or -.0.

Why did I get an INPUT ERROR when the strings in this routine got too long?

```
100 CALL CLEAR :: X=1
110 X=X*2 :: A$=RPT$("A",X):
: B$=RPT$("B",X):: C$=RPT$("
C",X):: D$=RPT$("D",X):: PRI
NT A$:B$:C$:D$
120 OPEN #1:"DSK1.TEST",VARI
ABLE 254,OUTPUT :: PRINT #1:
A$:B$:C$:D$ :: CLOSE #1
130 OPEN #1:"DSK1.TEST",INPU
T :: INPUT #1:A$,B$,C$,D$ ::
 PRINT A$:B$:C$:D$ :: CLOSE
#1 :: GOTO 110
```

Thanks to Irwin Hutt for the answer to that one. I don't think it's in the books anywhere, but the "I won't input multiple records in a single INPUT if the total number of bytes is too high - less than 154 for two records to less than 144 for six records.

I still think computers should be fun, so here is a quickie for the kids, or for the kid in you -

```
100 PRINT TAB(9)."QUICK DRAW
": : : :" How good a gunslin
ger are":"you?": :" Can you
outdraw":"Deadeye Joe?": :
110 PRINT " Watch the countd
own from 1":"to 0.": :" Wai
t for the gun....": :" Then
hit any key FAST ! - ": :" -
 and HOLD IT DOWN": :
120 PRINT " I got down to 20
 once - can":"you beat that?
": :" Press any key to start
"
130 CALL KEY(0,K,ST):: IF ST
=0 THEN 130
140 CALL CLEAR :: S@=300 ::
CALL CHAR(58,"009F9191919191
9F"):: CALL CHAR(42,"0000FCF
E171F0707")
150 CALL KEY(0,K,ST):: IF ST
=-1 THEN 150
160 CALL CLEAR :: FOR M=1 TO
 10 :: CALL HCHAR(12,16,M+48
```



```
):: FOR N=1 TO 100
170 NEXT N :: CALL KEY(0,F,X
):: IF F=70 THEN 330
180 NEXT M :: CALL CLEAR ::
FOR J=1 TO 500
190 NEXT J :: IF F=70 THEN 3
30
200 CALL KEY(0,K,ST):: IF ST
<>0 THEN 330
210 CALL HCHAR(12,16,42):: F
OR D=1 TO S@
220 NEXT D :: CALL KEY(0,Z,X
):: IF X=0 THEN 240
230 GOTO 270
240 CALL CLEAR :: PRINT :: P
RINT "YOU'RE DEAD!"
250 FOR D=1 TO 200
260 NEXT D :: GOTO 160
270 PRINT "OUCH!" :: IF S@<5
1 THEN 290
280 S@=S@-50 :: GOTO 320
290 IF S@<31 THEN 310
300 S@=S@-5 :: GOTO 320
310 S@=S@-1
320 PRINT S@ :: GOTO 250
330 PRINT "YOU CHEATED!" ::
GOTO 150
```

I always wondered about those recipe programs. Does the cook lug the computer out to the kitchen to read the screen, or use a printer to make a hardcopy of a file that was keyed in from a hardcopy in the first place?

Anyway, some of those programs do convert quantities for different servings, so here is a little program to do that. It provides input and output in fractions instead of decimals, because that is the way recipes are written.

```
100 DISPLAY AT(3,6)ERASE ALL
:"RECIPE CONVERTER"
110 DISPLAY AT(6,1):"Enter f
ractional quantities separat
ed by a space from whole q
uantities."
120 DISPLAY AT(9,1):"For ins
tance, to enter threeand one
-half, type 3 1/2"
130 DISPLAY AT(12,1):"Result
s will be rounded to the ne
arest 8th."
140 DISPLAY AT(24,7):"press
any key" :: DISPLAY AT(24,7)
:"PRESS ANY KEY" :: CALL KEY
(0,K,S):: IF S=0 THEN 140
150 DISPLAY AT(12,1)ERASE AL
L:"TURN PRINTER ON!"
160 OPEN #1:"PIO" :: PRINT #
1:CHR$(27);"@" :: CALL CLEAR
170 DISPLAY AT(5,1):"Name of
 rec.pe?" :: ACCEPT AT(7,1):
M$ :: PRINT #1 M$:"";""
180 DISPLAY AT(3,1)ERASE ALL
:"Recipe is for how many
 servings?" :: ACCEPT AT(4,
11)VALIDATE(DIGIT)BEEP:R
190 DISPLAY AT(6,1):"You wan
t to cook how many serving
s?" :: ACCEPT AT(7,11)VALIDA
TE(NUMERIC):S :: X=S/R
200 DISPLAY AT(10,1):"Name o
f ingredient? just enter
if finished)" :: ACCEPT AT(1
3,1)BEEP:A$ :: IF A$="" THEN
 STOP
210 DISPLAY AT(15,1):"Unit o
f measure?" :: ACCEPT AT(17,
1)BEEP:M$
220 ON ERROR 310 :: DISPLAY
AT(19,1):"Quantity in recipe
?" :: ACCEPT AT(21,1)BEEP:AX
$ :: A=VAL(AX$)
230 G=X*A :: J=INT(G):: F=G-
J :: IF P=0 THEN X$=STR$(J):
: Y$="" :: GOTO 290
240 IF J=0 AND P<=.0625 THEN
 X$="" :: Y$="less than 1/16
" :: GOTO 290 ELSE IF P<=.06
25 THEN X$=STR$(J):: Y$="" :
: GOTO 290
250 IF P>.9375 THEN X$=STR$(
J+1):: Y$="" :: GOTO 290
260 DATA .8125,7/8,.6875,3/4
,.5625,5/8,.4375,1/2,.3125,3
/8,.1875,1/4,.0625,1/8
270 RESTORE 260
280 READ M,N$ :: IF P>M THEN
 Y$=N$ :: X$=STR$(J)ELSE 280
290 IF J<1 THEN X$=""
300 PRINT #1:A$&" "&X$&" "&Y
$&" "&M$ :: GOTO 200
310 P=POS(AX$," ",1):: G=POS
(AX$,'/',1)::IF G=0 THEN 340
320 ON ERROR 340 :: IF P=0 T
HEN A=0 ELSE A=VAL(SEG$(AX$,
1,P-))
330 B=VAL(SEG$(AX$,P+1,G-1-P
)):: C=VAL(SEG$(AX$,G+1,255)
):: A=A+B/C :: RETURN 230
340 DISPLAY AT(24,1):"OOPS!
TRY AGAIN" :: CALL SOUND(1,1
10,0,-4,0):: RETURN 220
```

And here is an oldie - a utility to get the bugs out of your programs.

```
100  MOSQUITO #2 by Jim Pat
erson from a PEEK by Craig Mi
ller
110 CALL CLEAR :: CALL SPRIT
E(#1,42,2,100,100)
115 DISPLAY AT(22,1):"Don't
let the mosquito get":"out o
f the TV!":"Press any key -Q
UICK!"
120 RANDOMIZE :: CALL PEEK(-
31806,A,B):: CALL MOTION(#1,
A-128,B-128):: CALL KEY(0,K,
S):: IF S=0 THEN 120
130 CALL CLEAR :: CALL COLOR
(1,2,8):: CALL SCREEN(2):: C
ALL CHAR(32,"FF888888FF888
8"):: GOTO 120
```

Long live the TI-99/4A!

Jim Paterson

The Tigercub

V-AGE/99 * NEW-AGE/
99 * NEW-AGE/99 * N
EW-AGE/99 * NEW-AGE
/99 * NEW-AGE/99 *

* by JACK SUCHERE, Box 459, East Douglas, MA 01516 *
#1-4

GENTLEMAN GENIUS

Of the two tags, Gentleman and Genius, I think the former gets my approbation, concerning the best way to describe John Willforth. My wife, Elaine, agrees. For John is first a real gentleman; and that is what you think of before realizing he's also a genius. Gentlemen, I think, are rarities today, even among TIers; though I've discovered more in the 99er ranks than in other walks of life. People like Charlie Good, Jim Cox, Jim Peterson, Barry Traver.

Geniuses, though, are a dime a dozen in the computer world, and most of them are far from civilized.

An example, small but significant: Lots of TIers have been to my home, all of them treated to Elaine's gracious welcome, her extended hospitality in the matters of food and lodgings so they get to know her and discover, too, that we two rattle alone around our hut, now that our four tykes have leapt into the grownup world, returning us to "coupledood" these past two years. So any female voice answering our phone will be Elaine. But John is the ONLY "adult" TI person who will acknowledge Elaine's existence on the phone. He always says, "Hi, Elaine, this is John Willforth," when she answers, just as if she's not a non-person. Sometimes they converse so long I have to pry the phone from her fingers so I can get to talk to John.

With others who've been here, however, it's usually "Jack there?" when she answers, without even mentioning who they are.

I don't know. Maybe I'm old fashioned, but I still believe a lot in courtesy and friendliness and the acknowledgment of the existence of someone I've met.

Anyway, John is old fashioned in this way, too, and I like it: 19th Century values in a 21st Century mind. It's fun being in tune to someone as family oriented as he is. He talks about his wife (Fay) and his three daughters with such joy that you know love and sensitivity are a VERY LARGE part of his nature.

My wife and I talk about John so much that my son Matthew and his wife (Carolyn) wanted very much to meet him. The last time he came over for dinner, we had the "kids" over, too, and all of us enjoyed his pleasant, witty company all evening.

John's a talker. That's a compliment. And he can converse about almost anything but literature (as he claims he doesn't have time to read novels, thus leading to the time-worn argument in THIS house that all the major social changes in the world have been brought about by fiction ... and so on). It's fun arguing with John because the conversation is stimulating and he's still your friend in the end.

John's logical. He even tries to use logic with his teenagers (which probably makes him illogical, when you think about it).

He's hardworking (to a workaholic degree, I think) at some pretty heavy duty electronic wizardry. John even has a calculator on his watch, which he uses.

He writes well. His articles on printers, as well as the long-term articles on hardware (and software) are lucid, practical, and scary: SCARY in the sense that he takes apart consoles and P-boxes and anything else mechanical electrical, and electronic that he can get his hands on and performs vivisectionist surgery on their innards. He seems to be able to radically modify anything, from computer chips to his backhoe and assumes everybody else should be able to do so.

Whew! Not me. My hands shake when I have to dump my pencil sharpener or fill my stapler.

But John's made me a believer. One evening he came up to my computer room, still chatting about his family, and, while carrying on the conversation, took apart my working P-box. Completely! Screws, nuts, bolts, fans, stuff, whachemacallits, and thingamajigs. Then he reversed my fan, explaining that it would keep my box cool (maybe even cooler) while it would cut down the noise to one-third. It did. We turned on other P-boxes in the room and compared them to the fix.

He also told me where and how to order floppy drives and how to install them (5.25 and 3.5 operate with no cable modification on the TI). I learned that I could buy any IBM compatible half-height disk drives and put them in my TI. (ERM Electronic Liquidators (1 800 775 5865)] for fully warranted reconditioned drives. I called, bought two Panasonic DSDD ($29 each!!!!), installed them myself. Just like a computer grownup. Though they also sell cables and disks (for as low as .15 each DSDD), I ended up getting a Power Y cable for internal power connector ($.99) and an AT-HDDR cable set for double connector to controller ($2.89) and a whole lot of other things from another company he recommended, National Computer Accessories (916-441 1568). So, thanks to John, I was able to convert my setup on my school system from one SSSD to two DSSD at a cost of around $60! And does that make a LARGE difference in my ability to do TI things in my classroom. As a matter of fact I'm writing this at school on my quiet P-box. DSSD system and LOVE it! Everything works great. (Remember, we're talking about John teaching me, the man who has to use a manual to open a jar of peanut butter. You readers are chuckling over this "big" hardware deal, but John opened up new worlds to me. I plan to confidently upgrade another system soon and maybe even do a user group demo.

Which brings me back to John's generous spirit. While at a training session in Connecticut some months ago, John willingly came to our M.U.N.C.H. in Worcester, Massachusetts, one evening and shared some great insights and answered all kinds of questions, including some about things he had written as newsletter editor of the West Penn user group, which he founded many years ago to reach out to users outside the Pittsburgh area.

He was also the hit of the New England Fayuh that same week. Everyone there was thrilled to meet the man they all knew through his writings and references to his work by others. He ended up being the biggest TI star at the whole event. People at the fair were in awe of him and still talk about his visit yet I've met very few humbler men.

Now, back at my desk at home, I'm using a console John modified a while ago and recently gave to me. It has a plexiglass cutaway of the interior housing of a Zenoboard containing a clock, speech, 32K, E/A, XB, ADVENTURE, TTW, DM, and a system Pause button. All switchable. I feel as though I died and went to TI Heaven.

The man's a genius, no doubt, but more important, he sure is a warm and sensitive friend. To me, it's worth owning a TI just to have met John Willforth.