# GREATER TAMPA BAY
# TI USER GROUP
## MARCH 1989

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## NEXT MEETING MAR 7'89    AT 7:00 PM

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Greater Tampa Bay TI User Group meets in Brandon Fla. on the first
and third Tuesday of each month at Brandon High School in room 352.

The first Tuesday of the month is the general business meeting and
to show off new hardware or software programs.

The third Tuesday is set aside for special interest group. If you
have a problem with either hardware or software , this is the
meeting to come to.

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### Officers

President: Charles Kinsey             Vice President: Paul Wiese
          644-5012                                   985-1048
Librarian: James McGlone              Secretary: Brenda Burwell
           837-9387                              886-5942
Treasurer: John Hartweg              Editor: Robert Barnes
           686-3429                           533-2275
*************************************************************************

## **** TI HEAVEN ****

Clubs BBS    8/N/1                    2400/1200/300 Baud   24 Hrs

PC Pursuit: Accessible  FLTAM         Sysop: Gary Sweers

                    813-654-titi (8484)

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## **** Cy's Swap Shop ****

    2400/1200/300 Baud  24hrs    8/N/1    Sysop: Cy Leonard

PC Pursuit Not Accessible but well worth the cost to sign on.

                    813-725-4568

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## THINKING OUT LOUD
by: Robert E. Barnes

Well, here it is, the deadline for this newsletter and I am just starting on this column.

Did you survive the BIG FREEZE of 1989? For this area it was COLD and it nearly froze my socks off.

The newsletter seems to be taking a look at Hardware Modifications and getting more news on a wider range of subjects thanks to the help of our new Prez. Keep up the good work Prez.

I will cut this short this month since there is a lot to publish and if I go over the limit of pages set by the Postal Services for First Class mailing, your Vice Prez will have my head on a silver platter. So with that thought, onward to the real reason you picked up this copy of the newsletter. (It ain't to read this column, thats for sure).

## MEETING RECAPS
by: Brenda Burwell

The meeting was opened at 7:05 pm with 24 in attendance. We had two visitors Robert Mays and his 3rd grader Chris.

There was a discussion of where the meetings are to be held on 27Mar and 4Jul as the school will be closed on those dates. If you have any suggestions please contact one of the board members.

Work is still progressing toward the raffle of an HRD. Once the required $200.00 is met, the drawing will be held immediately. If this sort of affair is successful, others will possibly follow.

New business...We are going to start our own "help" section called "DEAR RAY". Ray Murphy will be the person to whom you will direct your inquires and/or pleas for help. Ray will jump on your probbie and get, from whence ever, a solution for you.

Our demo for the eveing was telecommunication...sorta. We has a lot of technical problems and when they were resolved, we couldn't get on the BBS for a while. Finally, perseverance paid off, and we were able to get through, cruise around the various areas, and help a member who had been having trouble downloading.

The lotto was held and was won by Bob Barnes. (curses, foiled again)

## FROM THE PRESIDENTS DEN
by: Charles kinsey

And around and around we go, where it all stops, who knows! About the time I am running out of things to do something else pops up. Last month was my big month for telecommunications. Well, this month it is hardware modifications. Some of you may have noticed my Rude Goldberg on my Gram Kracker. After a couple of years of changing the Lithium battery in my Gram Kracker I decided there must be a better way. Taking the module apart to replace the battery is a lot of trouble. I did find some instructions on replacing the Lithium battery with a NiCad. However, this modification was a little complicated for me. Anyway, I wanted to do something right now and not wait to order parts. So I dismantled my Gram Kracker again (hopefully for the last time). I removed the lithium battery holder and replaced it with leads to an exterior battery. Now I can use any type of battery that will give me three volts. Presently I am using a couple alkaline penlight batteries. The nice feature about this modification is that I can replace the batteries without taking the module apart.

At the regular meeting in February I showed off my nightmare of wires crisscrossing around the main board of my console. The worse part of my nightmare was that it did not work. What the modification was supposed to be is 32 K ram memory on the 16 bit buss in my TI99/4A console. This is Mike Ballman's original 32/16 modification. Well, I took Gary Sweers advice and removed all my modifications to see if I had a working board. To my relief the main board was not blown. So I then proceded to redo the whole thing again but this time I used IC sockets so that if I had to remove the chips it would not be such a difficult job. As often as I could, I checked my board to see if it was operational. There were a few times that I corrected wiring errors before I got to far along. This made backtracking pin connections much easier. Well folks, guess what, after many hours of mental stress and frustrations IT WORKS! What I now have is 64 K of RAM MEMORY on the 16 bit bus. The present modification uses only 32 K and is supposed to yield a speed increase of 50%. Mike Ballmann is currently working on a circuit to allow CRU decoding of the remaining 32 K. this will open up a whole new area of software including such possibilities as a real DOS which could be loaded into RAM from disk on power-up.

Also in my kit from Bud Mills there were instructions on bypassing the 32/16 bit memory conversion so that I can use an external 32k in my P-box. The reason for making this modification is that it allows you to run those programs that are incompatible with the increased speed without having to swap consoles and add an external 32K to the system. The way I can test this is using the size command in X-BASIC with the P-BOX turned off.
By checking the size when I am bypassing the 32/16 it shows no memory expansion.

Hold on folks, there is more! I also added a supercart in my console to the 32/16-bit. When an Editor/Assembler module is inserted into the console and the switch is on, the memory in the console will function the same as a Supercart. The only differences are that this memory will work faster than a normal Supercart.

Now for the icing on the cake, how about battery backup. I elected to use a couple of AAA alkaline dry cells, this is supposed to give me 2 years of backup. I could have used a lithium battery for one year of backup. However, my experience with Lithium batteries indicates that they are prone to give you grimlins in your programs when you use them after your computer is turned off.

I have not tested the system out extensively except to make sure everything works. I can not confirm the speed increase, maybe this would be a subject for another report. Also my console is spread out all over the place. I have not attempted to put it back in its home yet with all of it extra switches and buttons. That in itself will be a challenge. Another reason it may be a while before I put it all together is that I would like to put another crystal in it to make it run faster. Boy, this disease I have is getting progressively worse. Enough already........more to come later.

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TI BITS Number 15
by: Jim Swedlow
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[This article originally appeared in the User Group of Orange County, California ROM]

MAKING A DEGREE MARK IN TI WRITER

An owner in Huntsville Texas wrote me and asked if I know how to make TI Writer; type a degree sign on a TI

Impact Printer (it is a Epson MX80). A degree mark is not one of the standard ASCII characters. Although many newer printers can print it, the MX80 can't.

The only way I could figure to do it was to combine TI Writer's transliterate command and the MX80's graphics ability. After a bit of experimentation, I hit on this:

.TL 91:27,76,7,0,48,72,72,72,48,0,0

This redefines the left bracket ([). The first two characters (27,76) tell the MX80 to invoke graphics. The next two (7,0) tell it that there will be seven graphics characters. The last seven characters define the degree mark.

This is not a perfect solution as, if you right justify, the right margin will be a bit uneven. It should work, however, on most Epson and compatible printers.

SOME THOUGHTS ON WORD PROCESSORS

Of late I have occasion to use a number of word processors on other machines. I learned word processing on TI Writer and I wanted to see how the 4A stood up.

TI Writer is limited by the 4A's design. Eighty columns and a full keyboard make text management (warning: buzz phrase alert!!) much easier. Otherwise, TI Writer fairs well.

Just about anything you can do with the big name packages, you can do with TI Writer. Sometimes it is a bit harder, but it can be done. TI Writer is a powerful and flexible tool. It has some abilities, like transliterate, that are superior to other word processors.

The others are slicker because they have much more memory available. They can do things with one or two key

strokes that take five or ten with TI Writer - but they can be done on the 4A.

If you are writing a book, it might be worth the cost to move up. But for correspondance, writing this column and similar jobs, TI Writer can do anything you need it to do. And that's a fact.

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THE REPRINT ROUNDTABLE
by: John Hartwig
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THE EDITOR'S JOB:
(from Pulk Apple Core, Apr '88)

If we print jokes, people say we're silly. If we don't, they say we are too serious. If we clip things from other magazines, we are too lazy to write them ourselves. If we don't, we are stuck with our own stuff. If we don't print every word of all contributions, we don't appreciate. If we do print them, the column is filled with junk. If we change a contributor's story, we are too critical. If we don't, we're blamed for poor editing. Now, like it or not, somebody will say we swiped this from some other publication. WE DID!!

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DOWNLOADED FROM COMPUSERVE
by: Charles Kinsey
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YOU THINK YOU GOT TROUBLES?
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[Excerpt from the article "Schoene neue Welt" ("Beautiful New World") appearing in the latest issue of HOME COMPUTER AKTIV (TI-REVUE), Nr.6.88, p.4ff. Translated and uploaded to Compuserve by Wayne Stith with the permission of the publisher, HCA

After discussing baud rates, parallel and serial ports, data bits and the like, the article turns to a quirk in the German way of doing things. The

phone system in Germany is run by the post office.

in this our country a communications-happy freak falls very quickly over the very tight edge of legality. The policy of our post office, which hopefully will have to change soon under pressure of the Common Market, is as it happens the number one barrier to sensible communication here. While the communications sector is blossoming and prospering in other countries, we find ourselves literally in the stone age of telecommunications. The reason for this?

In principle, everything which is not expressly allowed is forbidden. Thus, all post office terminal devices may be used without limit; unfortunately, their accomplishments do not coincide with the fees which the post office charges for them. Everything else is just about completely forbidden.

So there remain for the law-abiding citizen only some post office approved acoustic couplers whose prices (for 300 baud or for the mixed 1200/75) are still acceptable (between 250 and 350 marks). [At today's rates, that works out to about $142 to $199. -Tr.] An acoustic coupler for 1200 or even 2400 baud (the latest rage) with postal permission can only be had for prices 1000 marks and up [$570. -Tr.] An acoustic coupler is of course a nasty thing. The communications-crazed computer owner must take the phone off the hook, stick it in the holder of the acoustic coupler, and then dial the desired telephone number by hand. Then quickly run to the computer and work the communications program. Ah well, thousands of freaks do that every day.

But how much simpler it would be with one of the nice Hayes compatible modems with 2 year warranty which can be had with 300 and 1200 baud in full duplex for 400 Marks and up! [$228. -Tr.] However, they may only be used

abroad or in your own internal private phone system. Such a modem is connected simply with two wires to the private phone system, connected to the computer via the interface to the RS 232, and that's it. If you wanted to call a mailbox [BBS. -Tr.], you would only have to type in the phone number on your computer; the rest is done by the communications program and the modem.

One must of course say that there are already postally approved modems offered by foreign sources. These are announced with great jubilation and move in price regions which are beyond discussion for the private person (1900 marks) [$1083.- Tr.]

Hayes compatible, incidentally, means that a modem follows a certain international standard and is automatically not postally approved (normally). It follows a certain command set, the Hayes commands. With these commands, which are simply sent to the modem, one can dial and set the modem parameters. Delicacies such as automatic baud rate recognition (that means that the modem recognizes whether a caller is sending at 300 or 1200 baud, for example, and adjusts itself automatically), automatic redial if the first call was unsuccessful, or automatic answer of a call--- all very fine things, unfortunately they are not allowed.

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HARDWARE HACKING REPRINT
by: Charles Kensey
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LOAD INTERRUPT, HOLD and RESET SWITCHES FOR THE TI 99/4A COMPUTER
First, let's describe what each of these switches will do for you and the computer.

LOAD interrupt: The load interrupt, when activated will cause the computer to suspend its current operations. Then it will look at a specific memory locations that will tell the computer

where to go for the next set of directions. This switch is usefull for several utility type programs. You can have a debugger or dissasebler loaded in the memory along with the program you plan to check. When your running program cuts up, you can hit the load interrupt and be put into your debugger program. Then you can go see what happened to your program in the computers memory. Another use is screen dump routines. You can have a utility loaded up in the computer and your program. When you want a copy of the screen you hit the load interrupt switch and then the screen dump routine takes over and you end up with a hard copy of what was on the screen. You can come up with all kinds of utilities for the load interrupt switch.

In specific a load interrupt causes the 9900 cpu to initiate a interrupt sequence immediately following the instruction being executed. The memory location at >FFFC is used to obtain the vector for the Workspace Pointer and the Program Counter. The old Program Counter (PC), Workspace Pointer (WP) and the Status Register (ST) are loaded into the new workspace and the interrupt mask is set to >0000. Then the program execution resumes using the new PC and WP.

Here is a check, just for grins, that will let you know that the load interrupt works. If you have a memory editor type program (SBUG,MEMORY+AID, GRAM KRACKER,etc) go into memory location >FFFC and change the next four bytes to >83 E0 00 24. The first two bytes are the Workspace Pointer (>FFFC) and the last two bytes are the Program Counter (>FFFE). If you do a load interrupt using these changes the computer will do a power up reset routine. Another is to set the WP and PC to >83C0 and >0900. This is a level one interrupt. When you do it, the system will lock up, but you will note all your P-Box cards lights will be on except the memory. HOLD: The hold does what it implies. It puts

the microprocessor on hold. It's good
for stopping the computer dead in its
tracks. Works great for games that do
not have a pause function.  There is
times when you do not want to use it.
The states you do not want to be in
are Input/Output functions. Mainly,
like during a disk read or write or
initilization routine.  I think you
can understand why, but if you don't
know its possible to crash your disk
or cause some timing problems during a
file transfer. Let's not worry about
that.  The real uses for the hold, is
so that  other devices may access the
computer busses without the 9900 CPU
on line.

Specificaly, when the hold is active,
it is signaling the CPU that  an
external device, such as another CPU
or a DMA device would like to use  the
address  and data busses to transfer
data to and from memory.  The 9900
goes into  the hold state when it has
completed its present memory cycle.
The  9900  then places its address and
data buss  tranceivers  into  an  high
impedance  state,  along  with  the
control lines WE,MEMEM, and  DBIN.
Then  the 9900 will activate another
signal called HOLDA. This is  a  hold
acknowledgement.  When  the  hold  is
removed the processor will return to
normal.

After  installing  the hold switch, it
is very easy to test.  Just turn it on
while  listing  out a program in basic
or XB.  Try it during a game.   RESET:
Again  it  resets the computer.  It
causes the computer to do the power up
routine.   This is great  when  the
computer locks up. You hit the reset
switch and  your  back  to the title
screen. This saves wear and  tear  on
your power switch and extends the life
of the computers power supply.  There
have  been  many articles on the reset
switch and not all reset switches work
properly.  Let me explain why.  First
the basic form of the reset comes from

the cartridge that you plug in the
computer.  There is a line that runs
from  the  GROM port or cartridge port
back to the clock chip that supplys
timing for  the whole computer. When
the GROM port reset line goes low it
causes  the clock chip to reset and it
in turn passes a reset on to  the  CPU
and  the  9918  VDP  and  the 9901 CRU
chips.  If you have a Widget  this  is
what  they  use  to reset the computer
when you put a new cartridge in.   But
I'm sure you have notice that when you
have locked up a few  times  and  the
reset  on the Widget didnt do the job,
You had to shut the computer  off  and
on  to bring it back up.  This was due
to a lockup in the clock chip  and  it
could  not  pass the reset along.  The
modification  listed  will  reset  the
computer,  no if, ands or buts.  Thats
because it bypasses the clock chip and
runs  directly  to  the CPU.  When the
CPU sees the reset it  will  in  turn,
reset  all  other  devices  that  are
resetable.

Specifically, the reset causes the CPU
to  be reset and  inhibits  WE  and
CRUCLK.  When the reset is removed the
9900  initiates  a  level  0 interrupt
sequence the acquires WP and PC from
locations >0000  and >0002. It also
sets all status registers bits to zero
and  starts execution.  Reset also
terminates an idle state.

To check it out is easy.  When running
a  program push the reset button. You
will be returned to the title  screen.
If you computer locks up while running
a program  and  does  not  respond  to
anything,  press  the reset button and
you will be returned back to the title
screen.   Now  we  will discuss how to
install these switches.  First, This
modification will require you to open
up your  computer  and  solder  a  few
connections  directly  to the 9900 CPU
chip.  If you can't solder or open  up
the case, then this article is not for
you.  You also may  end  up  drilling

holes  in  the  case  to  mount  the
switches, but you don't have too.  So
think  about  it,  your computer will
never  be  a  virgin  again.  Also I
cannot be responsible for any problems
you may have by  trying  to  implement
these  modifications.  I have supplied
you  information  in  good  faith  but
again, its up to you.

       *(Cont. at top of next page)*

TREASURER'S REPORT
February 1989

Beginning balance         $ 659.85

Income
   13 Memberships     156.00
   11 BBS Service     132.00
    2 Maintenence fee 20.00
    Lotto receipts    18.00
    5 Ram disks       800.00
    Disk sales        130.00
    Donation -        24.60
    H. Nieuwendaal
    Library           10.00
    Dollar disks      30.00
                      -------
                      1320.60


Disbursed

    6. Smeers -       800.00
    RAM Disk order

                      ------
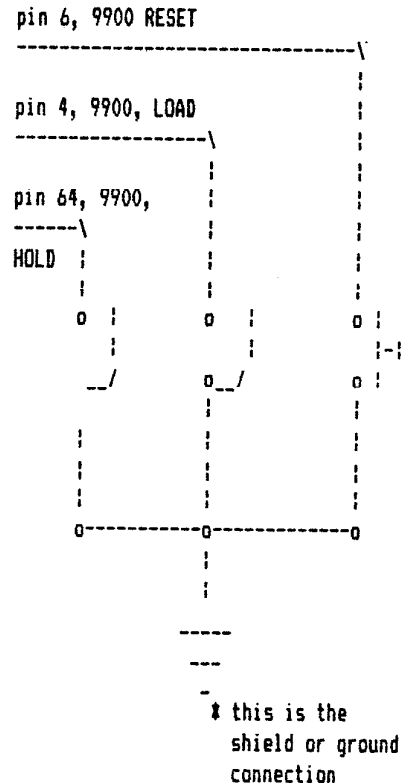                      800.00


Ending balance           1180.45

First the required parts:
* One push button switch,normally open type, use a micro type if you plan to mount it in the console.
* Two lever type switches, normally open, again micro types if for the console.
* Three 2.2 uF/16V tatalum capacitors.
* About 4 feet of small gauge wire for hook up. Wirewrap wire is great if you mount the switches inside the console. If you want to not drill holes in the console, buy some ribbon cable and a mini box.

Open up the console by remove the screws on the bottom of the console. Note how the door on the I/O port to the P-Box is installed. Then note how the power switch is assembled on the power supply. Remove the screws on the power supply board and set the power supply aside. Remove the plug from the power supply to the computer board. Note how the plug connects. Notice the keyboard and how it connects to the computer. Remove the screws that hold the keyboard and remove the keyboard. The computer is then removed by taken out the remaining screws that secure it. Note its position. Then remove the screws that hold on a shoild to the I/O port. Note how that connects. Then remove the remaining screws that hold the sheilds on the motherboard. Locate the 9900 chip inside. Its the biggest chip and it has 64 pins. On the bottom of the board, where no ICs are mounted, locate the CPU chip. We are interested in pins 4 (LOAD), 6 (RESET) and 64 (HOLD). Solder three wires to these pins and mark the wires as to what they are. Be very careful not to splash solder or to short out connections while soldering. Bring these wires out thru a hole in the shield. If you are going to install switches in the console, come out thru a lower hole near the power supply. Reassemble the motherboard with its sheilds and note all the above that was discussed while taking it apart. If you are going to mount the switches

in the console a good place is beside the power supply so the switches stick out beside the I/O port. Be sure to mount them so that they do not short to the power supply and make sure you will have enough room to mount your speech synthesizer. If you are using stand alone devices, you may want to mount the switches in the rear of the console. Now that you have found a location that works, mount the switches and solder one each of the three wires to each of the switches. Make sure that the reset line goes to the pushbutton. Solder one of the capitors to each switch accross the cnnections. Make sure the positive side of the capacitor is connected to the line that goes to the computer. On all of the switches run a jumper to the other side that has no connections. Jumper all of them togather and run one wire back to a ground on the computer. The sheild is a good ground point. Put the computer back togather following the reverse of taken it apart.

If you do not want to drill holes you have several options. First you can use ribbon cable and run it out of the rear of the computer to your minibox where you can mount your switches. This way if you decide to remove the switches you can just unsolder your connections and everthing will be back to normal. You can also mount the load interrupt switch external to the console, by coming off of the I/O port. You can mount the switch in the speech synthesizer be connecting one side of the switch to edge connector finger number 13 (LOAD) and the other side of the switch to pin 21 or 23 or 25 or 27 (all grounds). But you cannot access the hold or reset thru the I/O port. They do not make it outside of the computer. If you want just a load interrupt, Naverone sells a board that goes between the "firehose" and the console and supplys a load interrupt. Its about $15.

```
pin 6, 9900 RESET
---------------------------------\
                                 |
pin 4, 9900, LOAD                |
------------------\              |
                  |              |
pin 64, 9900,     |              |
------\           |              |
HOLD  |           |              |
      |           |              |
    o |         o |            o |
      |           |              |-|
    _/         o_/            o |
      |           |              |
    |           |              |
    |           |              |
    |           |              |
    o-----------o--------------o
                |
                |
              -----
               ---
               -
              * this is the
                shield or ground
                connection
```

Questions requiring an answer cost $1.00
Questions requiring thought cost $2.00
Dumb looks are still free (grin) !

Questions may be awnsered by leaving a message in the TI Forum, or by sending a message via EasyPlex. Contact Brian Kirby 70346,1703.

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MULTIPLAN
by: Audrey Bucher
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Back to the template. By now, you have your column headings in Row 3. To make your printout look nicer, you may want to realign R3 to center the headings. F for Format, C for Cells, Type in R3,tab over to align and hit C for center. Now you can begin to enter the information from your checkbook for January. Start with the check balance at the beginning of the month. This item has no check number and it's amount is not allocated to

any expense so put the ALPHA description FORWARD in R4C2 (under Paid To)and then right arrow until the cell pointer is in the Balance Column(R4C11). Type the amount and press ENTER. Next you' can begin filling in checks and deposits. At R5C1 enter the first check no. for January. Let's use 1234. As soon as you press enter, you'll see we need to make an adjustment. 1234.00 has been entered. This is because of the new default format we entered which is fine for dollars and cents but not so great for check nos. So we simply change the format of the cells in column 1 to be whole numbers or integers. And while we're at it, let's change the alignment format for C1 to Left to make a neater printout. Choose F for format, then Cells. To change all the cells in Column 1, type C1 where the system says Format cells, tab to align, type L, and tab to Format code and type I for integer. Now press ENTER and watch as the system changes the check number to 1234 and moves it to the left of the column. Next move the cell pointer to R5C2 and enter the payee for ck #1234 (let's use Duquesne Light). The check for $65 was a utility expense so right. arrow to the utility column (R5C6) and enter 65.

Now we want to have the system calculate the new balance and put the answer in the Balance Column in R5. Check #1234 just happened to be entirely for utilities . Some checks however may be split among 2 or more expenses. So what we really want for the balance on the row is the balance from the previous row minus the sum of any expense on this row. Some rows will show income instead of expense so we need to enter a general formula here because the equation for the balance in row N should be the balance at N-1 plus the income in row N minus the sum of the expenses in row N. Sound confusing? Don't worry, it's harder to say than do with Multiplan. Put the cell pointer at R5C11 where the balance to be calculated belongs.

Next press = to tell the system you are going to enter a formula. The first term in the formula is the balance from the row above. Use the up arrow to move the cell pointer to the above balance. You will see the expression R[-1]C in the command line. This means the cell at row minus one in the same column. Next we want to add any income from the current row. Hit + and the cell pointer pops back down to R5C11(where we started building the formula) and the formula is now R[-1]C+. Select the deposit amt. for the same row by left arrowing until the cell pointer is in the deposit column. Notice that the formula is now R[-1]C+RC[-8]. Since the deposit is in C3 and the balance is in C11, you can see why MP expresses this as Column minus 8. Now for the formulas third term. We want to subtract the sum of any expenses in the same row from the balance. Type - and the cell pointer returns to R5C11. We will use the special function called SUM to get the sum of the expenses. When you use SUM, you must tell MP what cells to add together in a FROM:TO expression. Type SUM( and then indicate the first cell to include in the sum by left arrowing until you are under the first expense which is Food in C4.Type : to show that you're ready to put in the last cell to include in the sum. Again the cell pointer pops back to R5C11. Left arrow once to select the last cell of the group of expenses to be added together. Finally type ) to close the expression and then press ENTER. The finished formula is R[-1]C+RC[-8]-SUM(RC[-7]:RC[-1]). MP will calculate the balance and fill in R5C11.

The formula applies only to R5C11 but we'd like it to be used on every row in the balance column. Since we have expresed the formula in relative terms (for example, using R-1 instead of R4, the same formula can be used for every balance. You can have as many entries as you need for the month and just copy the formula down that many rows.

Let's just assume you will have 10 entries. With the cell pointer still at R5C11, invoke the Copy command by typing C, then choose the option D for down and type 9 at number of cells. Press ENTER. MP will copy the formula down 9 rows. For now, this will give you identical balances in all 10 cells because there are no income or expense entries below R5 as yet. This will change as you make more entries.

When you finish filling in the checks and deposits, the final touch is to add the totals for the income and expense columns. Label the totals line by skipping a row after the last check no. and entering TOTALS under the Paid To column. Arrow one to the right and prepare to enter a formula by typing =. Here we'll use the SUM function again. Enter SUM( and then arrow up to R5C3 for the first item to sum. Type : and then use the up arrow for the last item (R14C3). Finish your formula by typing ). Check that the formula is SUM(R[-11]C:R[-2]C) and then press ENTER to see the income total appear. To total the other columns just copy the formula 7 cells to the right. C for copy, R for right and 7 for no. of cells.

Now press Function 8 and the entire sheet will be recalculated. Save your worksheet by pressing T for transfer, S for save and then enter a filename where the system says TEMP. If you have not recalculated with Function 8, MP will automatically do so before saving your spreadsheet. Next month we'll talk about printing the spreadsheet. If you have any questions, feel free to call.

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DEADLINE FOR NEWSLETTER CONTRUBUTIONS
The deadline to contributions to the newsletter is the 3rd Wednesday of each month. That's the day after each month's SIG meeting. You can bring your contribution to the meeting on a disk, or you can leave it on TI HEAVEN and leave a message for me.
##################################

## TIPS FROM THE TIGERCUB

### #49

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Columbus, OH 43213

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```
*********************************
*        NOW READY            *
* TIPS FROM TIGERCUB VOL.5 *
* Another 49 programs and   *
* files from issues No. 42  *
* through 50. Also $10 ppd  *
*********************************
```

TIGERCUB CARE DISKS #1,#2,#3 and #4. Full disks of text files (printer required).
No. 1 contains the Tips newsletters #42 thru #45, etc. Nos. 2 and 3 have articles mostly on Extended Basic programming. No. 4 contains Tips newsletters Nos. 46-52. These were prepared for user group newsletter editors but are available to anyone else for $5 each postpaid.

Another one for the teachers and their students -

```
100 DIM K$(17):: DIM B$(185)
:: DIM C$(18,2)
110 GOTO 150
120 SET,CH,K,S,K$(),J,B$(),C
$(J,1),Z$,Y$,X$,Q,X,Y,W$,PL$
,A,Q$
130 CALL CLEAR :: CALL COLOR
:: CALL SCREEN :: CALL CHAR
:: CALL KEY :: CALL PLURAL
:: CALL SOUND
140 !@P-
150 CALL CLEAR :: FOR SET=0
TO 14 :: CALL COLOR(SET,2,8)
:: NEXT SET :: CALL SCREEN(5
):: FOR CH=127 TO 129 :: CAL
L CHAR(CH,"0"):: NEXT CH
160 CALL CHAR(64,"3C4299A1A1
99423C"):: DISPLAY AT(3,2):"
PLURAL ENDINGS Version 1.1"
:: GOSUB 250
170 DISPLAY AT(5,1):"@ Tiger
cub Software for free distri
bution. No price or copying
fee may be charged." !writt
en by Jim Peterson 20 Nov. 8
7
180 DISPLAY AT(12,1):"DO YOU
WANT TO:":" (1)TAKE A TEST"
:" (2)FIND PLURALS":"":" TY
PE 1 OR 2"
190 ACCEPT AT(16,15)VALIDATE
("12"):Q :: IF Q=1 THEN DISP
LAY AT(12,1):"":"":"":"":""
:: GOTO 240
200 DISPLAY AT(3,1)ERASE ALL
:"This program has been pro-
  grammed with all the rules
  for forming plurals, but
  there are quite a few irre
g-"
210 DISPLAY AT(7,1):"ular pl
ural forms in Englishso the
answer it gives may not alw
ays be right."
220 DISPLAY AT(15,1):"Your w
ord?" :: ACCEPT AT(15,12)VAL
IDATE(UALPHA):W$ :: CALL PLU
RAL(W$,PL$,A)
230 DISPLAY AT(17,1):"The re
gular plural form is";PL$ ::
DISPLAY AT(20,1):"    I"&S
EG$(K$(A),6,255)&RPT$(" ",28
):: GOTO 220
240 DISPLAY AT(12,8):"GETTIN
G READY...." :: GOTO 440
250 CALL KEY(5,K,S)
260 K$(1)="No, if the word d
oes not end in E,F,H,N,S,X,Y
or Z just add S"
270 K$(2)="No, if the word e
nds in IFE, change it to IVE
S (FIFE is  an exception!)"
280 K$(3)="No, if a word end
s in E but not FE, just add
S"
290 K$(4)="No, if a word end
s in F,  (except EF or FF)
change it to VES"
300 K$(5)="No, if a word end
s in CH or SH, add ES"
310 K$(6)="No, if a word end
s in H but not CH or SH, jus
t add S"
320 K$(7)="No, if a word end
s in S, X  or Z, add ES"
330 K$(8)="No, if a word end
s in AY,  EY, OY or UY, jus
t add S"
340 K$(9)="No, if a word end
s in Y not preceded by a vow
el, change the Y to IES"
350 K$(10)="No, if a word en
ds in N but not in MAN, just
add S"
360 K$(11)="No, if a word en
ds in MAN, change it to MEN
"
370 K$(12)="No, if a word of
Latin  origin ends in U
S, change  it to I"
380 K$(13)="No, the plural o
f this word is the same as t
he singular"
390 K$(14)="No, some words e
nding in UM change the UM to
A"
400 K$(15)="No,if a word end
s in EF or FF, just add S"
410 K$(17)="No, many kinds o
f fish have the plural the s
ame as the singular"
420 RETURN
430 !@P+
440 DATA CAT,DOG,COW,MONKEY,
PARROT,WHALE,PLATE,CUP,FORK,
SPOON,DISH,WATCH,HOOK,PEA,AP
PLE
450 !@P-
460 DATA CUFF,CLIFF,SKIFF,RU
FF,CLEF,CHEF,CHIEF,DONKEY,CO
```

```
NIC
470 DATA LIMB,HAND,SOLO,SEA,
CLOUD,ROAD,BOY,GIRL,CORNCOB,
ARC,TREE,PIG,TANK,BALL,DRUM,
GUN,HARP,CAR,BOOT,SHOE
480 DATA MOTH,SLOTH,MYTH,LAT
H,DEATH
490 !in the next line, key i
n CTRL B before each word
500 DATA  CARP, MACKEREL, SU
NFISH, PIKE, SALMON
510 DATA SAW,WINDOW,HOUSE,BA
Y,GUY,TOY,GOAT,CAN,AUTO,TRUC
K,BRA
520 DATA WIFE,LIFE,KNIFE,LOA
F,CALF,HALF,SCARF,ELF,LEAF,W
OLF,PELF,SELF,WHARF,HOOF
530 DATA GAS,MISS,KISS,LASS,
TRUSS,BOSS,GLASS,CLASS,IRIS
540 DATA LATCH,WITCH,BATCH,R
OACH,LEECH,PEACH,ARCH,BRANCH
,BIRCH,MULCH,BROOCH,POUCH
550 DATA SASH,CRASH,FLASH,VA
RNISH,WISH,FETISH,RADISH,BUS
H,RUSH
560 DATA BAY,BOY,DAY,RAY,TRA
Y,HIGHWAY,GUY,ALLOY,BUOY,KEY
,MONKEY,TURKEY
570 !in the next line, key F
CTN V before each word
580 DATA  RADIUS, FUNGUS, CA
CTUS, GLADIOLUS, OCTOPUS
590 DATA MAN,WOMAN,FIREMAN,P
OLICEMAN,FOREMAN,CHAIRMAN,PO
STMAN,CHARWOMAN,MIDWIFE
600 DATA LADY,CANDY,BUDDY,BA
BY,ORGY,DOILY,PONY,PUPPY,STO
RY,POSY,PARTY,COVY
610 DATA TALLY,ARMY,NAVY,FOL
LY,PANSY,ARRAY
620 DATA BOX,FOX,TAX,WAX,SEX
630 DATA SPA,GURU,POTATO,TOM
ATO,ZEBRA,SKI,OPERA,CIRCUS,P
LUS,MINUS,BUS
640 !in the next line, key C
TRL , before each word
650 DATA  PANTS, SCISSORS, S
QUID, DEER, SHEEP, SWINE, MO
OSE, BISON, GROUSE, SERIES,
STAIRS
660 !in the next line, key C
TRL A before each word
670 DATA  DATUM, MEDIUM, CUR
RICULUM, PLANETARIUM, SOLARI
UM
680 DATA I,WE,HE,THEY,SHE,TH
EY,THIS,THESE,THAT,THOSE,CHI
LD,CHILDREN,TOOTH,TEETH
690 DATA MOUSE,MICE,LOUSE,LI
CE,GOOSE,GEESE,OX,OXEN,FOOT,
```

```
FEET,CRISIS,CRISES,APPENDIX,
APPENDICES
700 DATA ROOF,ROOFS,FIFE,FIF
ES,PROOF,PROOFS,THIEF,THIEVE
S
710 FOR J=1 TO 185 :: READ B
$(J):: NEXT J
720 RESTORE 680 :: FOR J=1 T
O 18 :: READ C$(J,1),C$(J,2)
:: NEXT J
730 FOR J=1 TO 185 :: Z$=Z$&
CHR$(J):: NEXT J :: Y$=Z$ ::
X$=SEG$(Z$,1,18):: DISPLAY
AT(12,1):""
740 RANDOMIZE :: Q=INT(203*R
ND+1):: IF Q<186 THEN 770
750 X=INT(RND*LEN(X$))+1 ::
Y=ASC(SEG$(X$,X,1)):: X$=SEG
$(X$,1,X-1)&SEG$(X$,X+1,255)
:: IF LEN(X$)=0 THEN X$=SEG$
(Z$,1,18)
760 W$=C$(Y,1):: PL$=C$(Y,2)
:: A=16 :: K$(16)="No, this
word has an       irregular
plural form. It is "&PL$ ::
GOTO 790
770 RANDOMIZE :: X=INT(RND*L
EN(Y$))+1 :: Y=ASC(SEG$(Y$,X
,1)):: Y$=SEG$(Y$,1,X-1)&SEG
$(Y$,X+1,255):: IF LEN(Y$)=0
THEN Y$=Z$
780 W$=B$(Y):: CALL PLURAL(W
$,PL$,A)
790 DISPLAY AT(12,14-LEN(W$)
/2)&W$ :: DISPLAY AT(15,1):"
Type the plural form" :: DIS
PLAY AT(18,1):"" :: ACCEPT A
T(18,14-LEN(W$)/2):Q$
800 IF Q$=PL$ THEN CALL SOUN
D(50,523,5):: DISPLAY AT(20,
1):"":"":"" :: DISPLAY AT(20
,11):"CORRECT!" :: DISPLAY A
T(12,1):"" :: GOTO 740
810 CALL SOUND(200,110,5,-4,
5):: DISPLAY AT(20,1):"":"":
"" :: DISPLAY AT(20,1):K$(A)
:: GOTO 790
820 PRINT K$(A):: GOTO 780
830 !@P+
840 SUB PLURAL(W$,PL$,A)
850 GOTO 880
860 Y$,W$,PL$,A
870 !@P-
880 Y$=SEG$(W$,LEN(W$)-1,2):
: IF ASC(W$)=127 THEN PL$=SE
G$(W$,2,LEN(W$)-3)&"I" :: A=
12 :: SUBEXIT
890 IF ASC(W$)=128 THEN PL$=
SEG$(W$,2,255):: A=13 :: SUB
EXIT
```

```
900 IF ASC(W$)=129 THEN PL$=
SEG$(W$,2,LEN(W$)-3)&"A" ::
A=14 :: SUBEXIT
910 IF ASC(W$)=130 THEN PL$=
SEG$(W$,2,255):: A=17 :: SUB
EXIT
920 ON POS("EFHSXYZN",SEG$(W
$,LEN(W$),1),1)+1 GOTO 930,9
40,960,970,980,980,990,980,1
000
930 PL$=W$&"S" :: A=1 :: SUB
EXIT
940 IF SEG$(W$,LEN(W$)-2,3)=
"IFE" THEN PL$=SEG$(W$,1,LEN
(W$)-2)&"VES" :: A=2 :: SUBE
XIT
950 PL$=W$&"S" :: A=3 :: SUB
EXIT
960 IF Y$="EF" OR Y$="FF" TH
EN PL$=W$&"S" :: A=15 :: SUB
EXIT ELSE PL$=SEG$(W$,1,LEN(
W$)-1)&"VES" :: A=4 :: SUBEX
IT
970 IF (Y$="CH")+(Y$="SH")TH
EN PL$=W$&"ES" :: A=5 :: SUB
EXIT ELSE A=6 :: GOTO 950
980 PL$=W$&"ES" :: A=7 :: SU
BEXIT
990 IF (Y$="AY")+(Y$="EY")+(
Y$="OY")+(Y$="UY")THEN PL$=W
$&"S" :: A=8 :: SUBEXIT ELSE
PL$=SEG$(W$,1,LEN(W$)-1)&"I
ES" :: A=9 :: SUBEXIT
1000 IF SEG$(W$,LEN(W$)-2,3)
<>"MAN" THEN A=10 :: GOTO 93
0 ELSE PL$=SEG$(W$,1,LEN(W$)
-3)&"MEN" :: A=11 :: SUBEXIT
1010 !@P+
1020 SUBEND
```

Here's another tinygram -

```
100 CALL CLEAR :: CALL CHAR(
47,"000000007C")::: DISPLAY A
T(2,1):"TIGERCUB ONE-FINGER
FIGURER"
110 DISPLAY AT(4,1):" Add an
d subtract with one":"finger
while the other hand keeps
track in a column -   you ca
n type the minus sign withou
t the shift key!"
120 ACCEPT AT(12,10)VALIDATE
(NUMERIC,"/"):A$ :: ON ERROR
130 :: A=VAL(A$):: GOTO 150
130 ON ERROR 140 :: A=-VAL(S
EG$(A$,2,255)):: RETURN 150
140 CALL SOUND(100,110,5,-4,
5):: DISPLAY AT(18,1):"ERRON
EOUS INPUT!" :: RETURN 120
```

```
150 T=T+A :: DISPLAY AT(18,1
):"Total is";T :: GOTO 120
160 DISPLAY AT(18,1):"Total
is";T
```

The new Super Extended Basic offers CALL KEY input with validation. Now you can have it too. This subprogram will accept only one of the characters listed, ABCD in this case, and the value returned in K will be the position of the input in the validation string.

```
100 CALL KEYVAL(K,"ABCD")::
PRINT SEG$("ABCD",K,1):: GOT
0 100
10000 SUB KEYVAL(K,V$)
10001 CALL KEY(0,K,S):: IF S
=0 THEN 10001 :: K=POS(V$,CH
R$(K),1):: IF K=0 THEN CALL
SOUND(200,110,5,-4,5):: GOTO
10001
10002 SUBEND
```

CALL FLASH(L,R,C,T,K)where L is the number of DATA items, R and C are DISPLAY row and column, T is the flashing speed and J is the number of the item selected, will display options alternately until a key is pressed.

```
100 DATA FCTN 7=AID,FCTN 8=S
TART OVER,FCTN 4=QUIT
110 CALL CLEAR :: CALL FLASH
(3,1,8,15,J):: ON J GOTO 120
,130,140
120 PRINT "AID" :: STOP
130 PRINT "START OVER"::STOP
140 PRINT "QUIT"
10000 SUB FLASH(L,R,C,T,J)::
FOR J=1 TO L :: READ M$(J):
: NEXT J :: J=1
10001 DISPLAY AT(R,C):M$(J):
: FOR A=1 TO T :: CALL KEY(0
,K,S)
10002 IF S<>0 THEN SUBEXIT
10003 NEXT A :: J=J+1+(J=L)*
L :: GOTO 10001
10004 SUBEND
```

MEMORY FULL......

                    Jim Peterson

1989

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