Mass Users of the Ninety-nine and Computer Hobbyists

AUGUST   1994   Monthly Newsletter Version 13.08

M.U.N.C.H.
C/O J. W. COX
905 EGDEBROOK DRIVE
BOYLSTON, MASS. 01505

NEXT MEETING: TUESDAY AUGUST   9th.

POSTMASTER: Forwarding and Address Correction Requested.

FIRST CLASS!!

R.A. BISHOP
16 FRENCH AVE
NORTHCOTE 3070.
VICTORIA   AUSTRALIA

NEXT MEETING TUESDAY, August 9, 1994 7:00 PM.   A TIng we will go.!!!

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

PRESIDENT   W. C. Wyman   865-1213
VICE-PRESIDENT   Bruce Willard   852-3250   MUNCH DUES:
TREAS./EDITOR/CLK.   Jim Cox   869-2704   New Membership $25.00
DEMO LEADER   Jack Sughrue   476-7630   Renewal $15.00
Asst. Demo Leader   Lou Holmes 617-965-3584   Newsletter Sub. $13.00
LIBRARIAN   Walt Nowak 413-436-7675
Advanced Programmer Dan Rogers   248-5502
****
JULY MEETING. The July meeting had six members in attendance. We had hoped
for a better turn out for our first picnic, but those who attended had a
great time. Jack showed some of the things that can still be done with a
cassette recorder and Ambulance was a very popular game.

AUGUST MEETING. Jack is scheduled to demo the latest version of Funnelweb,
if we receive it in time. We also might have some of the video of the Lima
Fair. We intend to show excerpts over the next couple of months.

RAFFLE. Every month we have a raffle to help defer the rental cost of our
meeting hall. A typical raffle will have programs, blank disks, books,
bumper stickers and all sorts of odds and ends of interest to the T.I.
user. This month we have some Tandy Model 4 computers.

REPRINTS. Reprints are 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 interest you will probably interest other members of the T.I.
community, so please share your ideas and opinions with all of us.

DISK LIBRARY. The disk library is at all meetings. We have copies of all
disks in the library and they are available to members for just $1.00 for
each disk unless otherwise specified. You can order them through the mail,
please add $1.00 for the first disk and $.40 for each additional disk
ordered to cover postage and handling.

DISK OF THE MONTH. This month's DOM #134 is "MUNCH Game Pack #1". Included
on this DSSD disk are Rampage, Cat, Panic, Maze 3D, Sign, Strip Poker,
Tombstone 2, Medley, Nim , Noise, Warbirds and many more; a total of 40
files.

ADVENTURE II. This is our fund-raiser for 1994/95. The cost to members is
$4.00 add $2.00 for first class postage. The regular price is $6.95 plus
postage. This is a two DSSD disk set, archived. There is also a special on
The Adventure Compendium and Adventure II for members it is $8.00 plus
$3.00 for first class postage.

```
1112345678900098765432111
1                         1
1 PLAYING WITH NUMBERS 1
0         No. 6          0
9    By Meredith Beyers   9
9                         9
2998765432100012345673999
```

POWERS OF THE BASES: TI59 Calculators
{VERSUS} TI99/4A Computers

This brief interjection is sparked by
Woody's ingenious account of an attack
by the infamous "Murphy" which postponed
the inclusion of a program scheduled for
September. As Woody told you, base
10\5¦ arithmetic was developed on TI
calculators and used in early
experiments with "Number Probes". (See
Glossary).

The TI59 programmable calculator
(attached to a thermal printer) made it
easy to generate the decimal values of
the positional powers of any PNS base.
It was "easy" because the calculator
provided individual fixed and numbered
"memories" in each of which independent
arithmetic could be performed.
Automatic increment or decrement of
address was available to control the
computational advance from right to left
and the printing sequence from left to
right.

I have no doubt that such a memory bank
can be simulated in assembly language
with hexadecimal addresses, but that is
a talent I do not possess. When I tried
it in XBASIC I ran into difficulties.
The offending "period"(.) Woody saw
briefly on my monitor (as I demonstrated
the trouble) was a decimal point used as
a radix point to chop off the "carry"
from five-digit numerals bursting bounds
by increase due to power generation.

One problem was printer formatting when
the semicolon was required to keep
successive five-digit numerals on one
line while the base-and-power "ID" of
the next line had to be prevented from
following suit.

Another (minor) problem is the
computational advance from the
zero-power position to the highest power
position reached, counts "from 0 to I"
(right to left) while the printing
advance counts "from 1 to I" (left to

right). A bit confusing. Woody plans
to help iron out all these wrinkles.

Meanwhile we plan to start a Glossary of
terms, problems and possibilties, not in
alphabetical order but in a sequence to
portray an overview of the PBA assault
on chaos in an ocean of numbers. The
shores and horizons of this numerical
ocean have provided a playground for
both professionals and amateurs through
generations of history. Perhaps we are
better equipped today than the pioneers
of past centuries. Chaos has always
been the great challenge to human
brains. Hence the technological
advances created to assist them. We
must discover the hidden Order or create
one.

CLIPS FROM THE PBA PROJECT GLOSSARY

GLOSSARY: A {Dictionary} defines. A
{Glossary} explains, instructs and
comments to relate a terminology to some
special field of interest or
application.

ARITHMETIC, BASE 10,000: A special case
of "Power Base Arithmetic" (PBA). PBA
universalizes decimal arithmetic by
using it to process multi-digit numerals
as if they were single digits.
Applicable to all Positional Notation
Systems, this multi-purpose development
avoids the confusing use of letters for
numerals greater than "9" and escapes
the barrier of scientific notation that
completely blocks the attainment of
accuracy that's essential for
explorations and experimentation with
large numbers. The chief usefulness of
this capability is in generating the
powers of PNS bases as launching pads
for "Number Probes" with means for
obtaining information from as "far out"
as we are able to go.

NUMBER PROBES: The successive generation
of powers of the bases of positional
notation systems. These powers carry
the means of obtaining information at
every step of the way. The information
is retrieved through two numbers that
are obtained by subtracting "1" from,
and adding "1" to, the last digit of the
power attained. Analysis of these two
numbers reveals important information we
need. For this reason accuracy to the
last digit of each power is required.

```
11123456789009876543211 1
1                        1
1 PLAYING WITH NUMBERS  1
0        No. 5          0
9    By Meredith Beyers  9
9                        9
99987654321001234567899 9
```

POWERS OF THE BASES FOR POSITIONAL SYSTEMS

The powers of any number may be generated by a small program derived from the algorithm for multiplication. More than one such program is available, using decimal arithmetic to generate successive powers in decimal digits. The decimal system and its arithmetic are so deeply entrenched that no modification seems feasible or even possible. Yet history forecasts that further development is inevitable.

This is interesting because we use the decimal environment of our computer as a base for launching explorations into a universe of other possibilities. For this reason we need to generate the powers of positional notation systems with bases other than ten. To bypass decimal limitations we use a power of ten. We experiment with the 5th power of ten as a base in order to escape from decimal arithmetic when accumulating powers reach the built-in limits of decimal accuracy in printing. It saves time to feed hectokilorad numerals of large powers into a computer from a pregenerated list rather than to program the computer to produce them individually as needed.

I hope you notice that I have thus far avoided all mention of the symbol "10" for ten. Reason: we have a problem, and that problem is the ambiguity of "10" outside of the standardized decimal environment. In order to use the decimal system to explore the universe of Numbers outside of these limits we must find a solution to this problem. A few reminders here of the circumstances that created it and the facts that must be considered in deciding whether or not it is a phantom problem, and whether or not we need to do something about it; and, if so, what?

1. The universal counting numbers may be generated by unit incrementation, beginning with the counter, 1.

2. The successive numbers are what they are, regardless of whatever names or symbols have been or will be used as numerals to represent them.

3. The first couple of thousand years B.C. and up to 500 A.D. there were various symbols and hieroglyphics for "ten", but no "0", hence no "10".

4. Tobias Dantzig (in his classic book on "NUMBER – The Language of Science") tells us that the origin of zero was the Hindu word {sunya} which stood for the void and was also used to designate the unknown. He thought that "in all probability" it was conceived as the symbol for an empty column on a counting board. He makes no mention here about the decimal system or any system of positional numeration, but states "...the Indian {sunya} was destined to become the turning-point in a development without which the progress of modern science, industry, or commerce is inconceivable." and "In the history of culture the discovery of zero will always stand out as one of the greatest single achievements of the human race." Dantzig comments, "A great discovery"..."Yes, but a gift from blind chance, not the reward of painstaking research."

All this and other references suggest that zero was born in ambiguity, that it became "fixed" in the development of the decimal system, that this fixation made all the technological advancements of civilization possible, and postponed further development by clogging the human mind with complexities which left no room for clear and full understanding of anything else.

So what do we find in the light of historic perspective? We find our set of Counting Numbers, the so-called "Natural" numbers, polluted by an ambiguity that has no business being there. Ten=10 (base ten) but 10=2 (base 2), 10=16 (base 2^4). 10=60 (base sixty) and so on. In short, "10" is the symbol of a signal meaning "This number is the base of a positional notation system. Count not with this numeral nor any higher than this."

Should not the set of Counting Numbers be independent of any system of using them? Perhaps the trouble comes from using zero (0) both as an arithmetical integer and a positional place-keeper. Modern usage hides this problem behind the alphabet, using "A" for "10" in all systems with bases greater than 9. But, in order to cover all bases in the decimal environment, we want to get rid of the alphabet. So is it a phantom problem because we have created it ourselves

TWO TONE THAT TI KEYBOARD!
A simple keyboard alteration
By David Hetkerthin

Lima Ohio User Group
December 1993

As you probably already know, there are two colors of TI
keyboards, black and tan.   But what you probably didn't know is
that there are at least two types of posts attaching those keys
to the keyboard. There are the more common HOLLOW square and (O)
posts and the less common SOLID or (+) posts.

If you have, or know someone else who has a keyboard of the
opposite color and the same post type, then you BOTH have the
opportunity of having a TWO-TONE keyboard which will make
programming and games like "Amazing" easier.

Suggested keys to swap and make a contrasting color are: ENTER,
FCTN, ALPHA-LOCK, $4, +=, J, K, I, M, E, X, S, and D.

The only tool needed is a large paper clip, straightened out and
bent into a "J" or fish hook shape. Keep the hook small. Insert
the hook between the keys and lift GENTLY, first one side of the
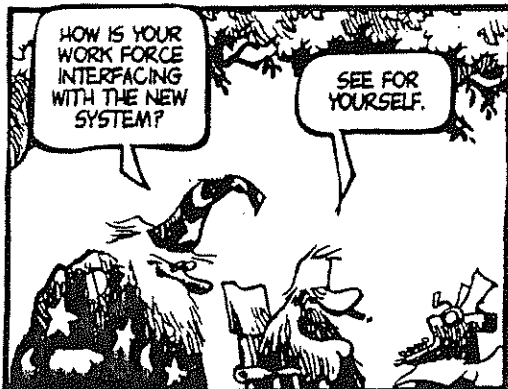key then the other until the key cap pops off.

As with any hardware modification you undertake, you do so AT
YOUR OWN RISK.

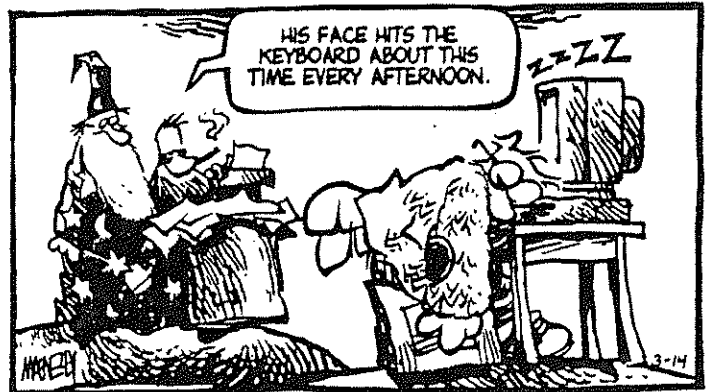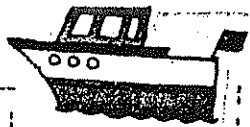Until next time, take care and enjoy your TI.

D.H.

**** DONE ****

Shoe   By Jeff MacNelly

Associated Writer for LITI 99er U.G.

After you load TI-SORT and see the title screen press enter. Then you will see:

‡ ‡ ‡ ‡ MAIN SCREEN ‡ ‡ ‡ ‡

HELP=F7   ESCAPE=F9

:   Ti-base database   :
:   Fixed records   :
:   Delimited records   :
:   Basic file   :
:   Order (ascending)   :
:   Catalog disc   :
:   Exit   :

SPACE to advance, ENTER to select

‡ ‡ ‡ ‡ ORDER ‡ ‡ ‡ ‡

Use the SPACE bar to move the hi-lited selection to Order. Pressing ENTER will toggle the order between ascending and descending.

‡ ‡ ‡ ‡ CATALOG ‡ ‡ ‡ ‡

If you are not sure of the filename you want to sort, move the hi-lite to Catalog disc and press ENTER. Then enter the disk to sort. As in TI-BASE, SPACE BAR will stop the catalog and "S" will start the catalog.
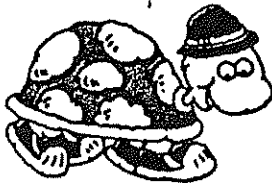
‡ ‡ ‡ ‡ TI BASE FILES ‡ ‡ ‡ ‡

To sort TI-BASE data-base files move the hi-lite to "Ti-base database". Pressing F7 will produce:

:TI-BASE data-base files are fixed   :
:length records where the data appears   :
:in the same place in each record. i.e.:   :
:   :
:   AAAABBBBCCCCCCDD   :

:   AAAABBBBCCCCCCDD   :
:   :
:TI-BASE data-bases consist of a   :
:structure file (/S) and data file (/D):   :

Press ENTER to remove the help screen. Press ENTER again to sort a TI-BASE database. You will now be asked to:

----SOURCE TEMP DEST----

Enter source disk: DSK1.
    Enter the filename to sort without the /D
Enter temporary scratch disk: DSK1.
    If you have more than one drive, enter its number and insert a blank formatted disk in it.
Enter output device: DSK1.
    Enter the drive number and filename for the sorted file. The source disk filename is given as the default.
Then press the SPACE bar to redo or ENTER to continue.

----SORT ORDER----

The structure file is displayed.
Select the sort order by moving the hi-lited area from field to field using the SPACE bar. Press ENTER when the hi-lite is on the first field you want to sort. Then move the hi-lite to the second field to sort and press ENTER. You can do an eight level sort.
If you make an error, pressing "R" will reset the sort order.
When you have made your last sort selection press ENTER again and the sort operation will start.

You can check the sort order by pressing the "K" key while the program is sorting. When done press ENTER, move the hi-lite to exit and press ENTER.
You can now load TI-BASE and view the sorted data base.

‡ ‡ ‡ ‡ FIXED RECORDS ‡ ‡ ‡ ‡

To sort fixed record files move th hi-lite to "Fixed records". Pressing F will produce:

:Fixed record files expect the data to: :
:be located in the same place in each   :
:record. i.e.   :
:   :
: AAAA BBBB CCCCC DD   :
:   :
: AAAA BBBB CCCCC DD   :
:   :
:It does not matter if the file type   :
:is fixed or variable as long as the   :
:data is consistent.   :

Press ENTER to remove the help screen Press ENTER again to sort a fixed recor file. You will be asked to:

(see SOURCE TEMP DEST above).

Then you will be asked for a structur file. The first time enter "N" then pres ENTER. If you resort the file you ca enter the name of the structure file yo saved.

-----BUILD STRUCTURE-----

This is done the same as for TI-BASE.

FIELD	DISCRIPTOR	TYPE	WIDTH	DEC
1	A_ABOVE	C	5	
2	B_ABOVE	C	5	
3	C_ABOVE	C	6	
4	D_ABOVE	C	2	

Start a blank field and press F8 to end your structure. You will then be asked if you want to save the structure. Enter "Y" and press ENTER. Then enter a filename for your structure file and press ENTER. Note, you must include any blanks between fields when building the structure file.

(see SORT ORDER above).

So far these are the only two types of files I have sorted using TI-SORT.

```
+--------------------------------+
| WELCOME TO LITI                |
|   Jerry Keisler                |
|  Associated Writer             |
|       FROM                     |
|   Paris, Texas.                |
+--------------------------------+
```

```
:     TI-SORT      :
:   reviewed by    :
:   Jerry Keisler  :
```

Associated Writer for LITI

After reading in LA TopIcs what Bill Gaskill said about his beta-test of TI-SORT I had to have a copy. The program is fantastic! Just what I always wanted in a sort program!

Sort 99,999 record files.
Sort on 8 levels
Ascending and descending sorts
Sorts:
    TI-BASE files
    fixed length files
    delimited files
    Basic program data files
    XB program data fles

Sort 99,999 records in a file? Let's see, that's about 3 bytes per record on a DSDD disk which means you need a hard disk to sort 99,999 records.

I tried the program on several of my TI-WRITER files and TI-BASE files. My test file of 1600 records went from almost 4 hours to sort in TI-BASE to almost 9 minutes to sort on RAM disk. The same file sorted on floppy disk in almost 19 minutes. Now that is speed.

TI-SORT works by reading a block of records, sorting them, writing the sorted block back to disk (in a scratch file), then reading another block of records, etc until all the blocks of records are sorted. Then it moves the scratch file back to your file, putting it in complete sorted order. The block size varies with record length.

Unlike most sort programs, in which the time to sort seems to increase with the square of the number of records to sort, TI-SORT does a linear sort.

If you normalize the **times**, you will find TI-SORT uses about the same length of time to do all its operations on 100 records. This time varies with record size, storage type and level of sort. The one level sort on 128 byte records (see chart) took 32 seconds per 100 records using RAM disk and 73 seconds per 100 records using floppy disk.

128 BYTE RECORDS
1 LEVEL SORT.

RECORDS SORTED	TIBASE RAM DISK	TISORT FLOPPY DISK	TISORT RAM DISK
	HH:MM:SS	MM:SS	MM:SS
0	0	0	0
100	57	1:13	32
200	2:52	2:28	:65
300	6:19	3:41	1:37
400	11:33	4:55	2:10
500	19:03	6:09	2:42
600	26:58	7:23	3:14
700	38:53	8:37	3:47
800	52:12	9:50	4:19
900	1:07:18	11:04	4:52
1000	1:24:28	12:18	5:24
1100	1:45:00	12:32	5:56
1200	2:05:26	13:46	6:29
1300	2:30:26	14:59	7:01
1400	2:54:28	16:13	7:34
1500	3:21:26	17:27	8:06
1600	3:51:50	18:41	8:38

Sort time per 100 records:
    GROWS   73sec 32sec

If you do much sorting, you need TI-SORT.

our ten year old orphans is beyond my expectations. If some products are delayed or some goals never achieved, it was not for lack of trying and the community should respect those who have tried. Bud Mills and WHT don't have all the bugs out of their SCSI project. Bud has certainly not made a lot of money on TI related stuff and has generously helped those who own a product of his, even if it was not bought from him. Sometimes he has taken what some would consider a long time to return a product for repair. I once waited three months for my return. I was glad when I got it. If I had the money I would send Bud a deposit on a SCSI device. He has apologized for the lack of a working model and offered to return his customers' money. Don't sound so shabby to me. Anytime I want to get angry I can call the manufacturer of my 486SX33 and get the runaround for weeks on end. Having said that, there seem to be some people to avoid when making a TI purchase. There is a gentleman in Canada who builds an 80 column device for the TI. I have heard him receive fire and brimstone for the way he conducts his business. I have also heard support and praise for his attempts at his projects. Bottom line is I wouldn't buy anything from him because he can't get his stuff together. I'm sorry for this failure and for those outside North America who are way past due a refund or a product. I don't care who's fault it is. It is now intolerable. If you want 80 columns, get a used AVPC, a Geneve, a used TIM, or wait and see what WHT comes up with. I would also appreciate straight talk from those involved in Asgard Peripherals. If you have left the TI market, just say it. I appreciate you having made the AMS design and schematics available to the public domain. 20 were made. There will be no more unless someone starts making them or the individual hobbyists builds one himself. If I have this wrong, let me know. Good-bye Asgard Peripherals.

It is hard on me mentally and physically. Many of the TIers at the Conference made it worth the effort. It was a pleasure to meet all these wonderful people. To meet them is as much a reason to go as to get my hands on all those little goodies. One of the "Gang of Four" helped me make copies of the Lima library disks. Thank You...If only I could remember your name. Harry Hoffman and his wife made my stay at the Motel 6 quite relaxing and very homey. Everyone there seemed to enjoy themselves and... I'm running on too much. I held back this article to see if there were any comments on Delphi. There were none. You'd think that LIMA MUG never happened. It did and I hope there is another MUG next year. You ought to go. You'll never know what your missing.

The following day's events are like a blurr, some cosmicly shared experience in another dimension of space and time. My first observation is you can't tell TIers by looking at them or reading their resume. All shapes, sizes, and backgrounds were represented. Most vendors are avid TIers as well as business people. If you expect to get a good deal on a cartridge you never managed to get aound to buying, you're idea of a bargain and the dealers idea of a bargain are probably not in the same ballpark. Oh, there are deals to be had. These transpire in a number of scenarios. TIers who are trying to get rid of some stuff because their families are about to through them out of the house will deal. If you have a lot of money and can make bulk purchases you can deal. There were a few people with full systems to sell and would not break them up. You can find someone who wants the parts of the system you don't want and go in for the kill. Keep Micheal Milliken, junk bonds, corporate takeovers, and the whirlwind '80s in the back of you mind and you'll know how to approach your target. Keep some of your stash until the end of the day and watch the prices plummet. Call Joseph Cohen and he'll trade for something you don't want anymore. If you find something you want, try the old dollar down and a dollar a week approach. It worked for me. What was purely amazing to me was the gadgets that are still available such as the CorComp Micro Expansion System, a neat little package especially if your pressed for space. I saw a Craig Miller Original GRAM Kracker. The individual, not a vendor, wanted $100.00, maybe $125.00 for it. I don't know what it actually went for. There were Super Sketches and Mice and Joysticks and Diskettes all resonably priced. If you collect word processors, there were 6 or 7 different variations available. There were cartidges by Romox, Milton Bradley, Funware, Spinnaker, Imagic, just about all the original manufacturers were represented. There were direct parallel printer interfaces that didn't require the RS232 cards or PEB's. Plenty of original TI Program Recorders. Many books relating to TIng and computing in general. My advice is to make up a wish list for next year, start saving, and come to Lima next year. Plenty of motels to stay at. Plenty of people to shuttle you back and forth.

And don't forget the seminars. Plenty of knowledgable TIers to answer all those questions you were afraid to ask. Just to meet Barry Traver and chat for a bit was worth the ride. He approaches the TI with a perspective that is subtlely unique and throroughly modern. If you think your TI is behind the times, talk to Barry for a while. If a computer were built today that was user friendly and desirably unique, it would have many of the qualities of the 99/4A and would by named the Barry Traver Very Special Edition. The seminars overlap by a half an hour, so you"l never see and hear all that is going on. But you can get Tapes of the MUG from Charlie for fifteen dollars or cheaper if you supply you're own tapes. Send to LIMA UG, PO Box 647, Venedocia, OH 45894. Be forewarned that these are not broadcast quality tapes. There is likely to be a lot of background noise. After last year's experiment with remote microphones, it was decided to go back to the mikes at the cameras as much sound was lost on the '93 tapes. Too many buttons to push and switches to switch. I have received these tapes for the past three years and there is always many hours of instruction, explanation, and demonstration.

Now let's turn to what was NOT at the Conference. I must preface the following with a short editorial. That anyone even attempts to manufacture hardware or write software for

LIMA MUG Conference of May, 1994

By Gary Fitzgerald
Nutmeg 99ers
Lima UG
Long Island 99ers
Ottawa UG
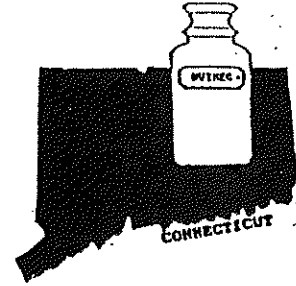
After driving through thursday afternoon thunderstorms in New Jersey, crisscrossing the East-West divider on Route 80, riding single file for miles and miles in the Red Devil - a 1993 Ford Festiva with a huge 1300 cc engine - I crossed the Pennsylvania-Ohio border. This was the farthest West I had ever been. Where were all the buffalo? Didn't matter 'cause it was dark and I wouldn't have heard all the thundering hoofs above the din of all those eighteen wheelers. I was pretty beat by this point but I sensed the alure all those TMS 9900 series microprocessors, so onward I went. Toledo and down? Columbus and over? Nah, not for this intrepid explorer. Me and my Teddy Bear (Wanna make somethin' of it?) ventured the Blue Highways except they weren't blue on my map. 1:30 am friday morning and I was in the Land of Oz. Real exciting. Slept till 1:30 pm friday afternoon. I regrouped and found my way to OSU Lima Campus. After getting directions from what must have a math professor - *There are four buildings and the driveway your on is tangential to the polygon....* - I found Reed Hall. I walked in and found Dr. Charles Good directing traffic. Seizing the opportunity to be quite witty, I announced myself as the Connecticut Division of the Lima UG, chest foward, feet together, three fingered salute. Well he looked at me as though I was a Commadore in TI clothing. So much for being cute!!! He recognized my name when I sheepishly offered it and was magnanimous in his greeting. He was thinner and taller than I expected. Must be due to the camera angles and such as viewed on my monthly Lima tapes. That hunkered down aspect of his physical appearance I always attributed to the necessity of poking his face into the camera to introduce himself. That's his natural stance, kind of like a coyote on the prowl. *Oh yeh, like I'm an expert on coyotes after my sojourn way out west.* I immediately picked up a tape dispenser and some preprinted signs to mark off who got how many tables where. I finally felt like a for real member of the Lima UG. I met many TIers that I had only spoken to. I started spending money and the MUG conference had not officially opened. That night I met some of the really big players in the TI community. The "Gang of Four" from Tennesee including Beery Miller and Gary Cox, Don Walden from Cecure, Tim Tesch of S and T Software. That night I was sitting in Beery's room as he further refined MDOS Version 2.0, had Don Walden and James Schroeder demonstrate and explain to me the upgrades available for the Geneve - 384K Expanded Memory for a total of 917K, Programmable Flash Memory, and PFM+. I saw this stuff in action and it was pretty impressive. If you want to operate in 80 columns, have the ability to reprogram your operating systems, have a choice of which files to boot up, and other options I'm too illiterate too explain, get thee to a Geneve and fill 'er up with all the goodies you can. You still have your trusty 99/4A to play with and, should you have jumped to IBM compatability, a choice of two TI emulators to save your first love in computers from extinction.