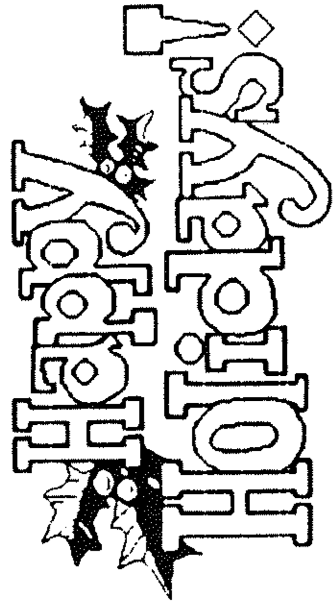
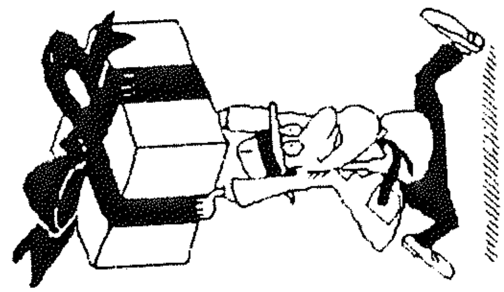
Mass Users of the Ninety-nine and Computer Hobbyists

DECEMBER 1994 Monthly Newsletter Version 13.12





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

NEXT MEETING: TUESDAY, DECEMBER 13th.

POSTMASTER: Forwarding and Address Correction Requested.

FIRST CLASS!!

NEXT MEETING TUESDAY, Dec. 13, 1994 7:00 PM. Season's Greetings!!!!

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

PRESIDENT	W. C. Wyman	865-1213		
VICE-PRESIDENT	Open		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		

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NOVEMBER MEETING. The November meeting had eight members in attendance. We were entertained by Jack's tale of meeting the President when he visited Framingham earlier this year. Leave it to Jack to be in the "front row". He also brought a disk of Sams Games which we played. These date back to the early to mid '80s, and they are still great fun. Chris won the raffle.

DECEMBER MEETING. It's Christmas time and we will have a great time. Jack will have something of interest for us all. It is probably time to elect some new officers, also.

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 #139 is a game disk with programs from the Sams books. these are a lot of fun. This disk is DSSD. If you had trouble running last month's program Psyborg here is the fix. First resequence the program and then merge it with the BXB program, this will fix the problem.

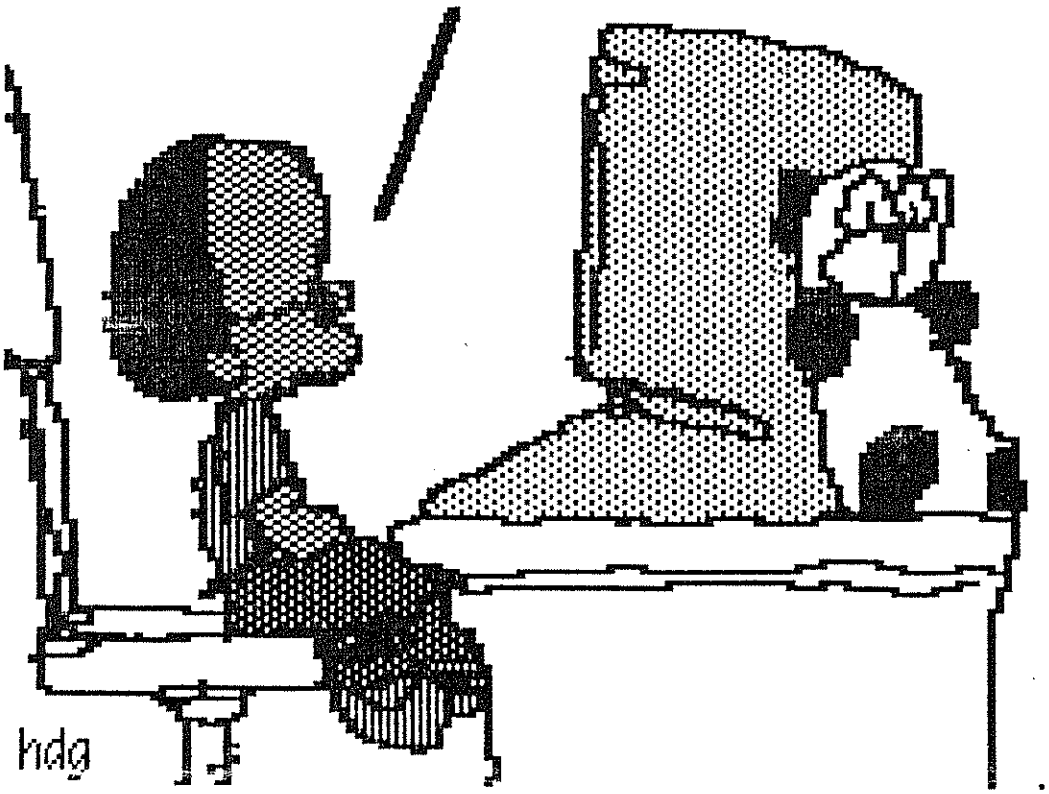
ADVENTURE II. This is our fund-raiser for 1994/95. The cost to members is $4.00 add $2.00 for first class postage. The regular price is $6.95 plus postage. This is a two DSSD disk set, archived. There is also a special on The Adventure Compendium and Adventure II for members it is $8.00 plus $3.00 for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

WELCOME NEW MEMBER. Leslie Hadley of Levittown, Pa.

BRUCE WILLARD. We will all miss Bruce for all the help and support over the years. He was one of the stars of our video, helped many of us with problems and is an all around great guy. Good luck Bruce.

FROM:
PIONEER VALLEY 99ERS

Remember Computer, If you fail to compute, you cease to exist!!!!



The Laws of Computer Programming

1) There is always one more bug.
2) Any program, when running, is obsolete.
3) If a program is useless, it will have to be documented.
4) If a program is useful, it will have to be changed.
5) Any program will expand to fill all available memory.
6) Program complexity grows until it exceeds the capability of the programmer to maintain it.

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

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

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

Specifications:

* Fits inside console above CPU board and solders directly to back of GROM conn., with just a few wires to the CPU board.
* Requires no additional power.
* Includes RESET circuit
* Can be expanded or configured as the user requires.
* Supports 32K STATIC RAM
* Supports Battery-backed CLOCK
* Supports SPEECH SYNTHESIZER
* Supports EXTENDED BASIC
* Supports additional switch selectable GROM
* Do-It-Yourself low cost

>>> SOME TECHNICAL ASSEMBLY REQUIRED<<<

DO not order at this time, because the idea is quite attainable, but there may not be enough demand to complete the project. Write/call:

ERIC ZENO (412) 371-4779
414 HIGHLAND RD.
PITTSBURGH, PA 15235 (SASE Please!)

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

JFW

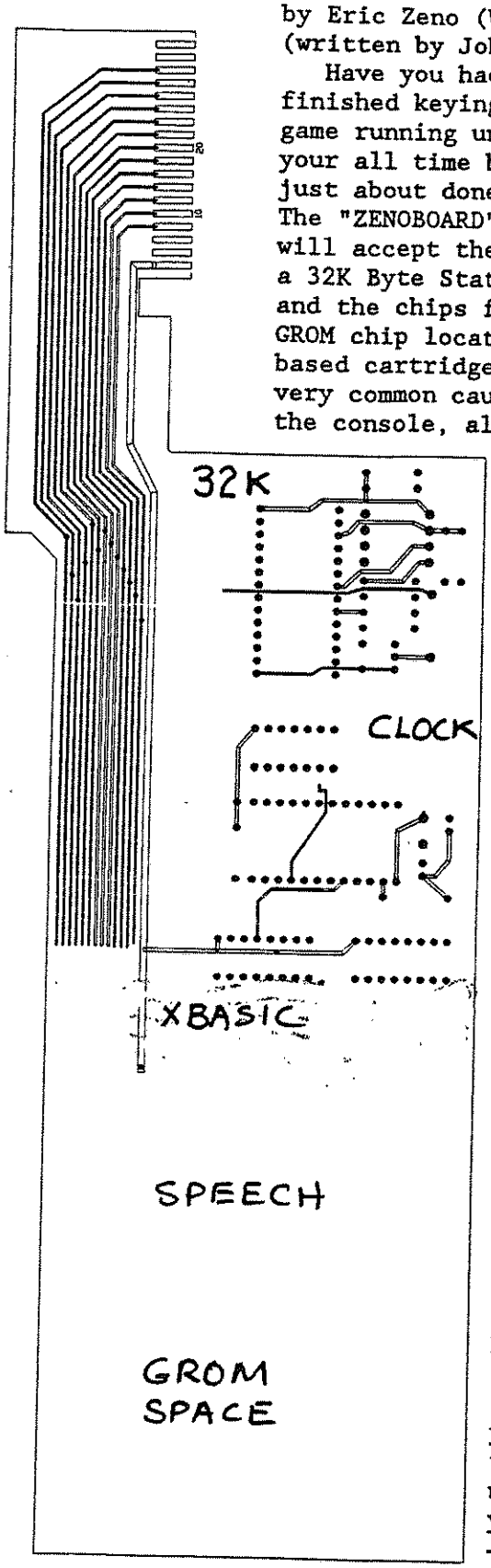


FIG. 1 THE ZENOBOARD

PLAYING WITH NUMBERS 10 (cont)

The factoring of 12333345666679 would add the factors 19, 37, 52579 and 333667 in less time. Note the factor 19. R18/19 is the repetend of prime 19.

Now divide R9 by 9 to get a single cycle of the repetend of 9. Factor this quotient, 12345679, and you will find that REP9=37x333667. Minor problem: Why is the digit 8 missing in the endless repetition of REP9?

Perhaps you will find an answer in the following exercise: Type the following lines to an empty screen of Basic or XBasic:

A=1111111111 ENTER
B=(A-10)/9 ENTER
C=B*8+9 ENTER
D=(C-9)/8 ENTER
E=D*9+10 ENTER

----------At this point check A to be sure you typed 10 "1"s and that in B to E all the characters are exactly as shown.

----------Then type the following line:

PRINT A:B:C:D:E ENTER

Since all primes greater than 2 are odd, we must explore the differences between the repetends of both primes and odd composites until we discover criteria we never knew before. Two examples follow.

Take a big one for the first experiment. Go to REP NUMBER from the first menu and ask for 1008 ones. Choose DIVIDE from the second menu and divide by 1009 which is the last prime in the program data bank. Your computer will be kept from printing such large numbers of ones, but it will give you a repetend of 1005 digits, remainder "0".

Should you attempt to factor that, you would get some of the smaller cofactors in the repetend of 1009. But skip it. Study the 1005 digits of the repetend instead. You should find four cycles of a smaller repetend. So divide 1008 by 4 and try 252 ones. 1009 should divide it without remainder, giving you a quotient of 249 digits. To factor it enter FAC from the menu on screen. But waste no time waiting for the last factor. I lasted through 3x3x7x7 x11x13x19x29x37x43x101x127x239x281x1933 with a quotient of 226 digits left.

Then I broke it with FCTN-4 and typed to screen: Print #1:"RF:";T - a note to remind me to resume factoring with 2467 when I got around to it. We are not concerned with all the factors here. We want to compare the repetend of an odd composite: 1007=19x53.

Since R9/9 gave us the repetend of 9, try R1007/1007. Ask for 1007 ones and divide by 1007. This should give you a quotient of over a thousand digits, but unlike R1008/1009 the remainder is not zero but 606. Study the quotient and you will find four identical cycles and part of the fifth cycle. 1007 is not a factor of 1007 ones.

From the deficient cycle I guessed that 251 ones might give us a single cycle of REP1007 with zero remainder. It gave me a remainder of 1005. With this data and a little counting I settled for R234/1007. Try it and look at the quotient: a single cycle of 231 digits with zero remainder. The factors: 3x3x7x11x13x13x37x79x157x859 with a 217-digit quotient where I quit with RF: 4183.

The differences between the repetends of these examples seem obvious, but many tests are required to justify such a conjecture.

Discussion of the repetends of "even" composites must wait for another session.

```
111234567890098765432111
1                       1
1 PLAYING WITH NUMBERS  1
0         No 10         0
9  By Meredith Buyers   9
9                       9
999876543210012345678999
```

EXPLORING THE DECIMAL MATRIX
of The Numerical Universe

Those of us who have been working and playing in the Numerical Universe are interested in exploring the "trails without end" that are blazed by repeating cycles of the repetends of prime numbers. But composite numbers also have unique identifying cycles of repetends that spread without limit throughout the reciprocal universe. Before we test this we should think two thoughts into realization:

(1) Each positional notation system creates its own counting matrix in the same numerical universe.

(2) In order to use the standardized decimal system of our computers as a base of operations in exploring other systems, we must work and play in the decimal matrix and its reciprocal ocean of standing-waves until we feel thoroughly at home there.

To most of us the single-digit counting numerals of the decimal system, along with our ABCs, became part of our educational second nature in childhood. Now we review them from a new and broader perspective because our computers are becoming extensions of our minds. Some of us have discovered that they can be used to open new frontiers for adventurous explorations. A few of us have found a numerical universe of unexpected simplicity and order. This was unsuspected because of inherited partial views that could see only chaos in the complexities of mind-boggling magnitudes and "minitudes."

Now we want to point out a neglected area for experimentation: the reciprocal domain of composite as well as prime numbers. The composite cycles begin with those of six and nine.

Remember these points:

(1) In order to isolate the repetend of a prime number P, you choose REP. NUMBERS from the menu of the "NUMRES" program, ask for P-1 ones, and divide by P. The quotient should contain the sequence of digits that repeat themselves without end. To make sure, you can call for twice the number of ones and compare the first and last digits of two cycles.

(2) The single cycle obtained above may contain two or more smaller cycles riding its "wave". If so, the entire quotient is the repetend of the prime, P, and the small cycle is the repetend of a cofactor of P.

(3) But not so with the repetends of composite numbers. "6" represents the "even" composites which can never be factors of any odd string of ones. "9" launches and represents the odd numbers that can be factored. Their exact repetends cannot be obtained by dividing a string of (N-1) ones by N, as with P in dividing (P-1) ones. You can find the answers for yourself with the following experiments:

Call for 8 ones and divide by 9. Note the quotient. Divide 18 ones by 9 to be sure of a quotient containing two cycles of the repetend of 9. You should find two identical cycles of 9 digits each, thus proving that dividing (9-1) ones by 9 does not give the full repetend of 9. Enter FAC from the quotient menu to factor the 2-cycle quotient and you should be given the factors 7,11,13, with a quotient containing 14 digits. At this point you would be shifted to decimal factoring if REM were removed from line 1280 of the program.

Loan Payments

by Tony Falco

The purchase of a home is probably the largest investment that any of us makes. The short program given below computes the size of a monthly payment for any loan whether it be a car loan, a credit purchase for an appliance or a home mortgage.

A major source of profit to a financial institution is the interest recieved from loans. With this program you can see just what portion of your monthly payment goes to the principal and what part goes toward interest. There are two versions of the program. In the first version, the output goes to the screen. When using this version, you must press enter each time you see a blinking cursor. This will cause the next month's figures to be displayed. The second version sends output to a parallel printer. To run either version simply enter the amount borrowed, the rate of interest, and the number of years for the loan separated by commas. Then press enter.

Let's run through a hypothetical loan. Imagine you are buying a new home for $180,000. You give a $36,000 (20% of $180,000) deposit. This leaves an amount borrowed of $144,000. Suppose you take a 30 year mortgage at 11%. The program tells us that you will make 360 payments of $1,371.35 each. Your first payment includes $1320 for interest and only $51.35 toward the principal. On the 9th payment of the 24th year, you pay $685.44 toward principal and $684.91 (almost equal) in interest. On your last payment $1,358.89 goes toward principal and only $12.46 is interest. Over the 30 year period you will have paid a whopping $349,684.45 in interest fees and $180,000 for the deposit and principal. This totals to $529,684.45.

```
1 CALL CLEAR :: INPUT "$,%,#Yrs:":P,R,T
:: I=R/1200 :: N=12*T :: PY=P*I*(1+I)^N/
((1+I)^N-1):: DISPLAY AT(4,1):" PAYMENT=
$";INT(100*PY+.5)/100:" YR  MO PRINCIPAL
  INTEREST"
2 FOR Y=1 TO T :: FOR M=1 TO 12 :: MI=I*
P :: MP=PY-MI :: DISPLAY AT(7,1):Y;TAB(5
);M;TAB(9);INT(100*MP+.5)/100;TAB(20);IN
T(100*MI+.5)/100 :: P=P-MP :: ACCEPT AT(
24,28):A$ :: NEXT M :: NEXT Y
```

```
1 OPEN #1:"PIO" :: INPUT "$,%,#Yrs:":P,R
,T :: I=R/1200 :: N=12*T :: PY=P*I*(1+I)
^N/((1+I)^N-1):: PRINT #1:"LOAN=$";P,R;"
%","PAYMENT=$";INT(100*PY+.5)/100:"YEAR"
,"MONTH",
2 PRINT #1:"PRINCIPAL","INTEREST" :: FOR
 Y=1 TO T :: FOR M=1 TO 12 :: MI=I*P ::
MP=PY-MI :: PRINT #1:Y,M,INT(100*MP+.5)/
100,INT(100*MI+.5)/100 :: P=P-MP :: NEXT
 M :: NEXT Y :: CLOSE #1
```

Financial Planning One Liners

by Tony Falco

Until computers came on the scene, calculations involving compound interest were laborious and complex. In most on the job applications, values were not calculated but rather they were read from tables. Your TI can now make financial calculation easy as illustrated by the four one liners below.

Suppose Auntie Mabel donates $1000 for your newborn son's education. Running program 1 you will find that if you invest it at 8% compunded monthly and leave it for 18 years then you will have earned $4,200.57.

You estimate needing $100,000 (a conservative estimate) for college 18 years hence. Program 2 tells you that at 8% compounded monthly for 18 years you should make a one time deposit of $23,806.27 to have $100,000 when you need it.

When you see that amount you decide that a systematic savings plan would be more practical for you. So you will invest $200 a month at 8% annual interest for 18 years. Program 3 tells you you will have accumulated $96,017.23 by the end of your 18 year ordeal.

You are curious to find the exact monthly deposit needed to yield your $100,000 goal. Program 4 to the rescue. This program says you will need $208.30 per month if you use all the figures above.

More technically speaking. Program 1 computes the future value of a one time investment. Program 2 computes the present value for a one time investment. Program 3 gives values for an annuity. And the last program creates values for a sinking fund.

Of course the hardest part is not computing the values but coming up with the dough.

```
1 CALL CLEAR :: INPUT "Invested:$":P ::
INPUT "Rate:":R :: INPUT "Cpds/Yr:":N ::
 INPUT "Years:":T :: A=P*(1+R/100/N)^(N*
T):: PRINT "FINAL VALUE=$"&STR$(INT(A*10
0+.5)/100):: END

2 CALL CLEAR :: INPUT "Needed:$":A :: IN
PUT "Rate:":R :: INPUT "Cpds/Yr:":N :: I
NPUT "Years:":T :: P=A/(1+R/100/N)^(N*T)
:: PRINT "Deposit=$"&STR$(INT(P*100+.5)/
100):: END

3 CALL CLEAR :: INPUT "Deposit:$":P :: I
NPUT "Rate:":R :: INPUT "Times/Yr:":N ::
 INPUT "Years:":T :: A=100*N*P*((1+R/100
/N)^(N*T)-1)/R :: PRINT "Final=$"&STR$(I
NT(A*100+.5)/100):: END

4 CALL CLEAR :: INPUT "Needed:$":A :: IN
PUT "Rate:":R :: INPUT "Times/Yr:":N ::
INPUT "Years:":T :: P=A*R/((1+R/100/N)^(
N*T)-1)/N/100 :: PRINT "Deposit $"&STR$(
INT(P*100+.5)/100):: END
```

TRANSFERRING FILES TI TO PC

by Philip Harris
Ottawa U.G.
December 1992

In case you're not sure how I passed TI Writer files to the PC, then let me explain. You will need the following hard/software: a null modem connector (approx. $8 at most computer stores), a female/female gender changer ($8), one or two modem cables, a modem program for both the PC and TI, TI Writer (Funnelweb), and the DF128/DV80 program (available from the Sysop on the Ottawa BBS).

Firstly, I download all the newsletter contributions from our BBS. After de-archiving any archived files, I then load up TI Writer.

Next, I select the first file for the newsletter and load the file as normal into TI Writer. Then merge in the next file by typing LF for Load File, and then type E DSK1.filename. This loads the file called "filename" from DSK1 and places it in the current document after the last line.

After all files are merged in, I can then do a rough deletion of unwanted formatting codes, then PF (Print File) to a file instead of a printer from the command line. The commands are: PF <enter>, C DSK1.Document <enter>. The "C" tells TI Writer to print the file stripping it of any TI Writer format characters and storing it in a "plain text" format.

The next step is to exit TI Writer and run the program DF128/DV80 and convert the DSK1.Document from a DV80 file to a DF128 file (ASCII standard).

Once the file conversion is complete, hook the two computers' serial ports together using the above equipment. Actually, you could do it DURING or even before the conversion.

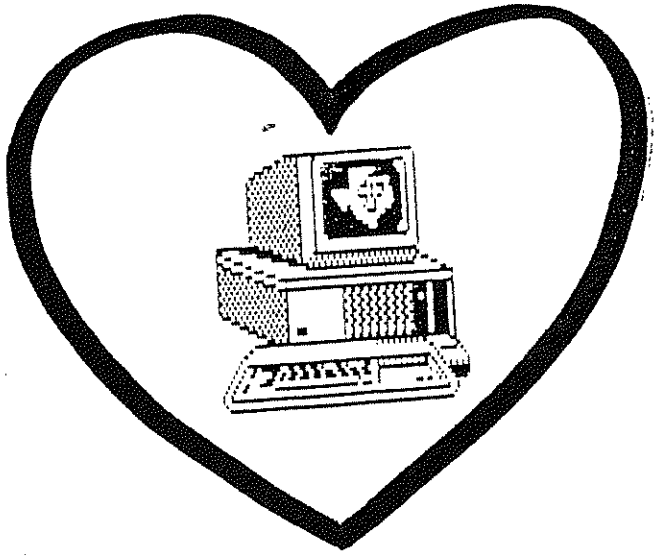
Lastly, run a modem program on each computer, enter terminal mode and set the baud rate at 9600. You should now be connected! You can test this by typing a few letters on the TI, and they should appear on the PC's screen. To transfer the files, simply select "upload" on the TI, Xmodem protocol, and type in the name of the file to send (e.g. in Telco: DSK1.DOCUMENT). Before pressing enter on the TI to send, select "download" on the PC, Xmodem, plus the file name (including path if needed) and press enter on both machines. The files should "scream" between machines. After the transfer, load your PC's word processing package (e.g. WordPerfect) and load in the ASCII text file. It's that simple!

ADDENDUM by Mark Schafer: I have successfully transported files between a TI and a PC, and the only connectors I used were a TI modem cable and a null modem cable (as opposed to a null modem connector). I didn't use a gender changer. Maybe you only need one if you don't have a null modem cable. I have no idea how easy a null modem cable is to come by.

If you think his second step reads a little awkwardly, it's because I changed it. He was going through a little more trouble than he needed to, so I simplified it. I couldn't say "I then merge..." because it isn't the way the author said he did it.

And speaking of unneeded trouble, I may be off the mark since I don't know a whole lot about telecommunications, but isn't it true that in some cases it would be easier just to download the file to a PC in the first place?

Also, I believe the above steps could be reversed if you want to go the other way. If the program DF128/DV80 that he referred to cannot convert the other way, there are programs that can. The conversion could also be done at the PC before sending.■



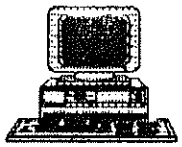
November 16, 1994

Dear Jim,

Over time many things change in one's life. I can still remember purchasing my first computer in September 1983; the TI 99/4A. At that time, and for many years later, I grew and it grew. With much help from numerous people from M.U.N.C.H. I learned the TI inside and out. It served me well for over a decade.

Now, with deep regret, time has forced me in a different direction. I have packed away my TI and will probably donate it, along with my sister-in-law's system, to Department of Mental Retardation Group Homes. It's kind of like recycling it for someone else's enjoyment. I'll be quite frank, it hurt to break it down and carefully place each piece in the box. Boxing it up brought back fond memories.

I have now moved on to a 486SLC50 multi-media computer. This computer meets more of my current day's needs for both business and personal use. I also use this system in my aide business, *PCs 'n Compatibles*, to teach PC Overview, Basic DOS, Windows 3.1 and Microsoft Word for Windows 6.0. Various other courses are currently being developed. By middle to the end of 1995 I expect to have a training center at my home where I will teach small classes. Now I teach privately either on my PC or at a client site.



While I won't be a M.U.N.C.H. member anymore, I do feel I owe the group a few things. First, I will donate floppies and modules to the group. Also, I have been meaning for some time to provide an article on ESD (Electrostatic Discharge) for the newsletter. All this will come shortly.

I will never forget you guys and all the fun times I've had over the years. I wish you guys the best of luck with M.U.N.C.H. Please relay my feelings to the group. Thanks.

Yours truly,

Burr