# net99er news

## NEXT MEETING:
## SATURDAY
## SEPTEMBER        9th

at 9:30am    in the NRH Community Center

## —* CLUB    OFFICERS *—

| | |
|---|---|
| President | James Crosson |
| Vice President | Charlie Bathman |
| Treasurer | Lee Deforest |
| Secretary | David Shivers |
| Membership Chairman | Bill Duncan |
| Librarian | Joe Torres |
| Newsletter Editor | Tom Collins |
| TI-NET BBS  SysOp | Phil Chappell |

# TI-NET    581-1421    300/1200 —7E1 — 24 hours

----- Presidents Page -----

Its time for the September meeting, but there is going to be a little change this time, normally for the last year we have met on the first Saturday of the month, but due to the holiday this month we will have our meeting on the second Saturday, 9/9/89. I hope that this does not interfere with anyone's previous plans, but this seemed the only way to have a good meeting that everybody could attend. We hope to have the four new 9640 computers in for the meeting, which our very own Lee Deforest is supposed to demo and help the new people set up their systems for use with the new cards. There are some excellant new programs that have come down the pike recently and they are making the 9640 more interesting to use all the time. I built an IBM clone and have been using it for several months,as well as my 9640 and TI, and frankly, of the three, I personally like the 9640 the most. I don't believe that the 9640 is for everybody, but I do believe that a person that has invested a lot of time and money in their TI's owe it to themselves to at least do a comparison between the two.

Recently, I recieved a phone call from Barbara Massey that nearly knocked my socks off. She informed me that she had decided to take the newsletter editor's job and also buy a 9640 as well. As you know we have been asking for some one to take the job of editor for several months and Barbara's name had come up, but when asked she said she didn't have any experience, but being the trooper she is, she volunteered, so everybody please express to Barbara our thanks. While we are at it lets let Tom know how much we appreciate the outstanding job he has done this last year. This coming meeting we are also supposed to have as a guest speaker, Gary Higgs, past president, resident communications expert, and Fortran programmer of 9640 fame. He will be discussing tele-communications set-up, problems and fixes and some special tricks he has developed. For those who have been having problems using Fast-term, Mass-transfer, and Telco, here is your chance to get the help you've been looking for. Hopefully by the meeting we will have the new program installed and running on the BBS, I know it's been down more than its been up, but if things work out this promises to be the best BBS program around. In the beginning we expect there will be some bugs, but bear with us, I think it will be worth the wait and enjoyment of everyone. It's time to close now, got things to do, places to go and people to see or is it places to see and people to do, heck I don't know, see ya at the meeting. Remember 9/9/89 not 9/2/89 at the same old place we been a meetin'! N.R.H. Community Center, Loop 820 and Rufe Snow Drive at 9:30 a.m. See ya there! ‡ James ‡

----- Treasury Report -----

We started the month with $602.28. We had an income of $75.44 most of which came from the DOM sales and one membership renewal. The expenses were $116.16 leaving the club with $561.56 in the Treasury. ‡ Lee DeForest ‡

This following list of people, according to my records, either need to renew or will be dropped from our rolls as members. If your records show different please Bill Duncan as soon as possible so I can update the records.

| | |
|---|---|
| Bell,King D. | 09-89 |
| Rokkas,Peter | 07-89 |
| Boddie,Lee | 06-89 |
| Sisk,Jean | 07-89 |
| Clay,James | 01-89 |
| Steele,Rosie | 09-89 |
| Cook,Fulton | 03-89 |
| Waltrip,Bill | 05-89 |
| Cooper,Brent | 08-89 |
| Williams,David | 02-89 |
| McCollum,S.J. | 04-89 |
| Woodard,Tom | 08-89 |
| Pearson,Jeremy | 09-89 |

This list may not be complete nor as accurate as we would like to make it, so, please check your mailing label for your membership expiration date.

----- Editors Input -----

Well, this month concludes my stint as the newsletter editor of NET99ER News. I hope I have provided the group with some interesting info and help in the past. My job has taken a turn toward training and I must do quite a lot of study in the future. The Editor job is not as difficult as most people would think. When I took it over I continued to do it as it had been done in the past. After several months, I decided we could place roughly the same info in a different format and use less paper. When I began, the cost of printing the NL was about $90 per month. It is now WELL below that and our Treasury reflect the savings. We have a volunteer to take the newsletter editor position and I applaude her. She has shown that new members have a real interest in keeping the club going. Barbara Massey will be our new Newsletter Editor. I will continue to be a co-editor/helper as long as she wishes. I also will be handling the BBS from my home, even though it is still located at Phillip Chappell's house. By the way, catch the BBS column in this NL. So that is it......let's all get behind Barbara and help all we can! *
Tom Collins *

----- Net99er BBS -----

The BBS has been a pain for quite some time. It has crashed and crashed and crashed. But fortunately it hasn't burned! We used to run TI-NET as our BBS program. It is a great program but the authors have not been supporting it like I think they should (my opinion). We now have a new program called PBBS (Paradigm Bulletin Board System). There are several versions of this program, and we have the one that allows us to fully utilize the Hard Drive for uploading and downloading. It has several message bases and plenty of

help files ALL throughout the program.  If you have some trouble, press A  and
you will be taken to the Main Menu.  Then simply press H and you have the help
files.  We have 6 download subdirectories and one reserved for  uploads  only.
The  only  exception  to  this is the Geneve 9640 subdirectory.  All 9640 file
should be uploaded to that directory.  The old BBS had a GAMEROOM  and  as  it
happens, we cannot use it with this program.  I would desperately like to use
it, and if ANYONE can help in the Extended Basic code, please volunteer.   The
group  that  sent me this version of PBBS, (MADHCHG) would also like to use it
with thier PBBS.  So if and when it happens we must share our development  and
changes  with  them  and the author.  I would like to take this opportunity to
thank some really patient people who have helped me work on this program.  Jim
Louis  and  Mike McGaughey have  helped  me  tremendously and they deserve a
healthy round of applause.  With out these two dedicated TIers, I would  still
be scratching my head and wondering what to do next.  Thanks guys! So call the
BBS at the same number - 581  1421.   Sorry  but  since  we  have  new system
running,  ya gotta go through the process all over again.  That's one price to
pay when changing software.  One more thing, we now are running the system  at
8#N#1,  so  change  your  parameter file BEFORE trying to log on! Uploads will
give you credits for downloading, but of course if you are  a  TIer,  you  get
some D/L credits do begin with.  Using the message bases (posting, replying to
messages, and joining in on the debates) also will give D/L credits.   If  you
have  a  non-TI  system and wish to leave an upload for someone else, you MUST
leave the Sysop feedback to that effect! Yes! You can upload ANYTHING  to  our
BBS,  even  for  IBM, ATARI, COMMODORE or whatever.  But beware! We only allow
PD, Fairware, and Shareware to be stored on our Hard Drive! Upload  commercial
software  and  you  get the BOOT, and I don't mean the MUG type either! I hope
the user base expands and builds.  Members  of  course  get  a  higher  access
level.    As  with most new software, we may encounter some program bugs.  When
it does get online, please be patient with it and the sysop.   It  is  a  new
program  and  we  have to learn it on three levels, Sysop, Programmer and user
levels.  With PBBS, the program reportedly doesn't  break  and  crash! Please
follow  the SYSTEM ERROR message routine and it will help us find the problem,
don't just abort the message! Tom Collins

----- CALL LOADS and PEEKS -----
From the Hunter Valley Newsletter

CALL LOAD(-31962,100,155) !Executes RUN
CALL LOAD(-31962,100,126) !Executes NEW
CALL LOAD(-31962,100,136) !Executes RES
CALL LOAD(-31962,160,04) !Executes RUN without Prescan
CALL LOAD(-31961,149) !Automatic RUN DSK1.LOAD
CALL PEEK(-31877) !VDP status register
CALL PEEK(-31878) !highest number sprite in motion
CALL PEEK(-31879) !VDP interrupt timer

| EDITOR COMMAND | FCTN | CTRL | EDITOR COMMAND | FCTN | CRTL | EDITOR COMMAND | FCTN | CTRL |
|---|---|---|---|---|---|---|---|---|
| Back tab | | T | Ins. Blank line | 8 | O | Quit | | ■ |
| Beginning/line | | V | Insert character | 2 | G | Reformat | | 2orR |
| Command/escape | 9 | C | Last paragrapph | | 6orH | Right arrow | D | D |
| Delete character | 1 | F | Left arrow | S | S | Roll down | 4 | A |
| Del. end of line | | K | Left margin rel. | | Y | Roll up | 6 | B |
| Delete line | 3 | N | New page | | 9orP | Screen color | | 3 |
| Line #'s(on/off) | 0 | | New paragraph | | 8orM | Tab | 7 | I |
| Down arrow | X | A | Next paragraph | | 4orJ | Up arrow | E | E |
| Duplicate line | | 5 | Next window | 5 | | Word tab | | 7orW |
| Home cursor | | L | Oops! | | 1orZ | Word wrap/fixed | | 0 |

Show Directory: SD (enter) Prompts for the drive number, then press (enter).
                           When the directory is displayed, pressing the space
                           bar will 'scroll' through the DV80 or DF80 filenames
                           and place the name in the lower right of the screen.
                           Press (enter) and the system will 'remember' that
                           filename and it will appear at the LF option.
---
Load files: LF (enter) DSK1.FILENAME  (load entire file)
            LF (enter) 3 DSK1.FILENAME  (merges filename with data in memory
                                         after line 3)
            LF (enter) 3 1 10 DSK1.FILENAME  (lines 1 thru 10 of filename are
                                              merged after line 3 in memory)
            LF (enter) 1 10 DSK1.FILENAME  (loads lines 1 thru 10 of filename)
---
Save files: SF (enter) DSK1.FILENAME  (save entire file)
            SF (enter) 1 10 DSK1.FILENAME (save lines 1 thru 10)
---
Print Files:PF (enter) PIO (prints control characters and line numbers)
            PF (enter) C PIO (prints with no control characters)
            PF (enter) L PIO (prints 74 characters with line numbers)
            PF (enter) F PIO (prints fixed 80 format)
            PF (enter) 1 10 FIO (prints lines 1 thru 10)
NOTE: The above assumes PIO, DSK1.FILENAME, and RS232 are also valid!
    To cancel the print command press FCTN 4.
---
Delete file:DF (enter) DSK1.FILENAME
---
Setting Margins and Tabs: (16 tabs maximum)
    L - Left margin     R - Right margin     I - Indent     T - Tab
        Use ENTER to execute or COMMAND/ESCAPE to terminate command.
---
Recover Edit: RE (enter) Y or N
---
Line move:  M (enter) 2 6 10  (moves lines 2 thru 6 after line 10)
            M (enter) 2 2 10  (moves line 2 after line 10)
---
Copy:       same as move except use C instead of M.
---
Find String: FS (enter) /string/  (will look for string in entire file)
             FS (enter) 1 15 /string/  (will look for string in lines 2 thru 15)
---
Delete:     D (enter) 10 15 (deletes lines 10 thru 15 in memory)
---
This copy of  TI-WRITER  commands are reprinted from the June issue of the 99'er
99'er News, published by the TI Users Group of  Will  County,  Romeoville,  Ill.
This puts the most used  commands on one page for handy access at your computer.

BITS, BAUD RATE, AND BPS
Taking the Mystery Out of Modem Speeds
by Michael A. Banks
Copyright, 1988, Michael A. Banks

Modem transmission speed is the source of a lot of confusion, even among
otherwise informed computer and modem users. The root of the problem is the
fact that the terms "baud" and "bits per second" are used interchangeably and
indiscriminately. I strongly suspect this is a result of the fact that it's
easier to say "baud" than "bits per second," though misinformation has a hand
in it, too. If you've ever found yourself confused by the relationship
between bits and baud rate, or if you think that a modem's baud rate is the
same as the number of bits or characters it transmits per second, please read
this article carefully; I guarantee to clear up the confusion and disabuse you
of any false concepts ...

## ‡ BITS PER SECOND (BPS) ‡

Bits per second is a measure of the number of data bits (digital 0's and
1's) transmitted each second in a communications channel. This is sometimes
referred to as "bit rate." Individual characters (letters, numbers, etc.),
also referred to as bytes, are composed of several bits. While a modem's bit
rate is tied to its baud rate, the two are not the same, as explained below.

## ‡ BAUD RATE ‡

Baud rate is a measure of the number of times per second a signal in a
communications channel varies, or makes a transition between states (states
being frequencies , voltage levels, or phase angles). One baud is one such
change. Thus, a 300-baud modem's signal changes state 300 times each second,
while a 600-baud modem's signal changes state 600 times per second. This does
not necessarily mean that a 300-baud and a 600-baud modem transmit 300 and 600
bits per second, as you'll learn in a few lines.

## ‡ DETERMINING BITS PER SECOND ‡

Depending on the modulation technique used, a modem can transmit one
bit--or more or less than one bit--with each baud, or change in state. Or, to
put it another way, one change of state can transmit one bit--or more or less
than one bit. As I mentioned earlier, the number of bits a modem transmits
per second is directly related to the number of bauds that occur each second,
but the numbers are not necessarily the same. To illustrate this, first
consider a modem with a baud rate of 300, using a transmission technique
called FSK (Frequency Shift Keying, in which four different frequencies are
turned on and off to represent digital 0 and 1 signals from both modems).
When FSK is used, each baud (which is, again, a change in state) transmits one
bit; only one change in state is required to send a bit. Thus, the modem's
bps rate is also 300:

300 bauds per second X 1 bit per baud = 300 bps

Similarly, if a modem operating at 1200 baud were to use one change in state to send each bit, that modem's bps rate would be 1200. (There are no 1200 baud modems, by the way; remember that. This is only a demonstrative and hypothetical example.) Now, consider a hypothetical 300-baud modem using a modulation technique that requires two changes in state to send one bit, which can also be viewed as 1/2 bit per baud. Such a modem's bps rate would be 150 bps:

300 bauds per second X 1/2 baud per bit = 150 bps

To look at it another way, bits per second can also be obtained by dividing the modem's baud rate by the number of changes in state, or bauds, required to send one bit:

```
     300 baud
---------------- = 150 bps
2 bauds per bit
```

Now let's move away from the hypothetical and into reality, as it exists in the world of modulation. First, lest you be misled into thinking that "any 1200 baud modem" should be able to operate at 2400 bps with a two-bits-per-baud modulation technique, remember that I said there are no 1200 baud modems. Medium and high-speed modems use baud rates that are lower than their bps rates. Along with this, however, they use multiple-state modulation to send more than one bit per baud.

For example, 1200 bps modems that conform to the Bell 212A standard (which includes most 1200 bps modems used in the U.S.) operate at 300 baud and use a modulation technique called phase modulation that transmits four bits per baud. Such modems are capable of 1200 bps operation, but not 2400 bps because they are not 1200 baud modems; they use a baud rate of 300. So:

300 baud X 4 bits per baud = 1200 bps

or
```
     300 baud
------------------- = 1200 bps
1/4 baud per bit
```

Similarly, 2400 bps modems that conform to the CCITT V.22 recommendation (virtually all of them) actually use a baud rate of 600 when they operate at 2400 bps. However, they also use a modulation technique that transmits four bits per baud:

600 baud X 4 bits per baud = 2400 bps

or (CONTINUED NEXT PAGE)

$$\frac{600 \text{ baud}}{1/4 \text{ baud per bit}} = 2400 \text{ bps}$$
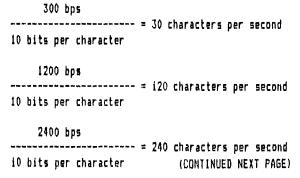
Thus, a 1200-bps modem is not a 1200-baud modem, nor is a 2400-bps modem a 2400-baud modem. Now let's take a look at 9600-bps modems. Most of these operate at 2400 baud, but (again) use a modulation technique that yields four bits per baud. Thus:

2400 baud X 4 bits per baud = 9600 bps

or

$$\frac{2400 \text{ baud}}{1/4 \text{ baud per bit}} = 9600 \text{ bps}$$

## * CHARACTERS PER SECOND (CPS) *

Characters per second is the number of characters (letters, numbers, spaces, and symbols) transmitted over a communications channel in one second. CPS is often the bottom line in rating data transmission speed, and a more convenient way of thinking about data transfer than baud or bit rate. Determining the number of characters transmitted per second is easy: simply divide the bps rate by the number of bits per character. You must of course take into account the fact that more than just the bits that make up the binary digit representing a character are transmitted when a character is sent from one system to another. In fact, up to 10 bits may be transmitted for each character during ASCII transfer, whether 7 or 8 data bits are used. This is because what are called start and stop-bits are added to characters by a sending system to enable the receiving system to determine which groups of bits make up a character. In addition, a system usually adds a parity bit during 7-bit ASCII transmission. (The computer's serial port handles the addition of the extra bits, and all extra bits are stripped out at the receiving end.) So, in asynchronous data communication, the number of bits per character is usually 10 (either 7 data bits, plus a parity bit, plus a start bit and a stop bit, or 8 data bits plus a start bit and a stop bit). Thus:

$$\frac{300 \text{ bps}}{10 \text{ bits per character}} = 30 \text{ characters per second}$$

$$\frac{1200 \text{ bps}}{10 \text{ bits per character}} = 120 \text{ characters per second}$$

$$\frac{2400 \text{ bps}}{10 \text{ bits per character}} = 240 \text{ characters per second}$$

# ‡ COMMON SPEEDS ‡

The most commonly-used communications rates for dial-up systems (BBSs and online services like CompuServe, DELPHI, and GEnie) are 300, 1200, and 2400 bps. A few older systems-- especially Telex systems--communicate at 110 bps, but these are gradually going the way of the dinosaur. 4800 and 9600 bps modems are generally available, but few online services or BBSs accommodate them. This will be changing in the near future, however, with the cost of high-speed modem technology decreasing as the demand for it increases. Modems with even higher bps rates are manufactured (19,200 and up) but these are not used with dial-up systems; the upper limit on asynchronous data transmission via voice-grade telephone lines appears to be 9600 bps. The use of higher transmission rates requires special dedicated lines that are "conditioned" (i.e., shielded from outside interference) as well as expensive modulation and transmission equipment.

If you found this article useful, you may want to pick up a copy of the book from which it was excerpted:

THE MODEM REFERENCE
by Michael A. Banks
Published by
Brady Books/Simon and Schuster
ISBN # 0-13-586646-4
$19.95

In addition to explaining the technical aspects of modem operation, communications software, data links, and other elements of computer communications, the book provides detailed, illustrated "tours" of major online services such as UNISON, CompuServe, DELPHI, BIX, Dow Jones News/Retrieval, MCI Mail, and others. It also contains information on using packet switching networks and BBSs, as well as dial-up numbers for various networks and BBSs. You'll also find hands-on guides to buying, setting up, using, and troubleshooting computer communications hardware and software. (And the book "supports" all major microcomputer brands.)

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NETYYER HCUG
P.O. BOX 534
HURST, TX. 76053