

WORDPLAY

GENERAL MEETING MAY 20th, 1996

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WORDPLAY PORTLAND, OREGON MAY 1996
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WHAT'S HAPPENIN' THIS MONTH

MAY MEETING ONE WEEK EARLY!

To miss the conflict with the Memorial Day weekend the May meeting is May 20th at home of Chuck Ball in King City. The address and telephone number is in heading at left of page. If you haven't been there before better call him up for specific directions.

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We're going to try to make this a 4 page issue but we need more input from our members. Information from exchange newsletters is getting scarce. A good source of up-to-date info is Micropendium but we can't plagiarize it and re-print it without advance permission. There sure is a lot of good info in Micropendium and it is worth every penny of the \$3.50. It is now published every other month.

INFORMATION

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No specific subject has been suggested for this months meeting but it is sure to talk a lot about getting on the Internet. One of the club's users who is sticking to the TI tried without much luck with Fasterm. He was able to get on Internet, but information coming back was mostly garbled. Just today he tried Telco and it seems to be the answer. If any one else out there has tried getting on the Internet with a TI your results would be of interest to all. The Internet works with a UNIX program. The club members who currently have Internet addresses will be listed in this newsletter.

Plan on being at next Monday's meeting!

-Ted and Ron

From newsletter of The Greater Akron 99er's.

"This is taken from a series of messages on the Chicago BBS and has been edited for use on the Hoosier User Group BBS by William M. Lucid Co-Sysop HUG BBS."

Announcements 12/18/95 from Michael Maksimik
Subj: Protocols

If your computer is a TI99/4A, use TERM 80 or TELCO or MASS TRANSFER. TELCO has some nice windowing features, and it supports 80 column cards using the V9938/V9959 video processors. Mass Transfer, in all its inceptions, has some unique file transfer protocols for sending bunches of files to/from the BBS.

TERM 80 supposedly allows ANSI cursor emulation, in 80 columns using a standard TI display. If you have a standard V.22 1200 baud modem, you should be able to connect to this BBS with no trouble. V.22bis (2400 baud) will work with the TI, but it is really the limit that the TI can display easily unless you have some type of processor upgrade, or hardware flow control (RTS/CTS signals from modem get controlled from the terminal program to prevent loss of data). I have tested TELCO at 4800 baud/9600 baud. Some 2400 baud modems have the data compression feature and this allows a terminal rate higher than the line rate.

Such a modem (2400 line rate, with compression and error correction) needs a higher host rate so it efficiently compresses/decompresses and corrects errors with no overrun errors. On such a modem, make your terminal rate 9600 baud, which is 4 times the line rate. It is rare that the modem will generate long sequences of 9600 baud data, but the decompression can produce short bursts of 9600 baud packets, especially with text data which is highly compressible. Make sure that you use ITU-T V.42/V.42bis (or LAP-M) protocols. Don't use MNP protocol unless you have to for maintaining a stable connection. Most phone lines now can handle higher baud rates, and since this BBS supports a maximum carrier of 14,400 you may want to invest in at least a modem of this type. Computer Fairs are practically giving away V.22bis/V.42bis modems (2400 baud modem with compression).

The TI and 9600 Baud

It is very difficult for the TI to keep up with 9600 baud, not that it is a slow computer, but because most terminal programs use the video circular buffer for receiving characters. When a character is sent through the RS232 port, the interrupt routine will grab the character, and put it into video RAM. This is the secret of how TE-II works.

TI is slow in this routine for a couple of reasons. First, there is only one IRQ line to receive interrupts from ALL peripherals. A second line was planned for the TI99/8, and an interrupt ID scheme was developed but never implemented, allowing faster detection of interrupt. The problem occurs when an interrupt is detected, the TI does not know which peripheral generated it. It must then turn on each card and pass control to the card so that it can check itself for a possible interrupt.

Some cards implement an interrupt routine consisting only of a return instruction, other cards actually check for a data byte. The RS232 card checks for interrupts on EVERY port (serial and parallel ports) and if you have two RS232 cards, that means six ports are checked for an incoming character. If you have a DIGIT video card, it also has an interrupt routine, and generally all cards are scanned.

Some cards (like the MYARC 512 card) does some type of bank switching on interrupts. the bottom line is that the computer is doing a lot of unnecessary searching for one little character, which takes a lot of processor time.

The problem is compounded when we actually get a character we need to store it somewhere. Well, the TI wasn't made with any large amount of CPU RAM, so we must store in slow VDP RAM.

VDP RAM access is byte oriented and it is pretty slow. Having a faster video (even if it is in 40 column mode) helps... a V9938/V9958 processor is a much better choice because it can handle data faster from the CPU.

You can also do some other things to speed the system up a bit:

1. Get the WHT keyboard module, which includes an updated system ROM containing a much better interrupt scanning routine. It is more efficient than the old console routine, and the new unit allows use of the new PC keyboards (101/102 keyboards). and it adds some usable system memory.

2. You can boost processor speed during terminal I/O by having a switchable 16mhz crystal. The TI uses a 12 or 48 mhz crystal. The 48 mhz crystal is used with the TIM9904 chip. You can substitute a TIM9904A, and use the 12 mhz crystal instead and use a switch to turbo the system to 16 mhz. Be aware that this will screw up the baud rates so use TELCO which allows a custom calculated baud rate taking into account the increase in system clock speed.

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3. Use some flow control. Although there are no terminal programs available which use flow control (TERM 80 may use it, I haven't found out yet) this allows a high line rate and controlled terminal rate so you don't lose data, and it is easier to stop/start the flow of data.

On the Geneve, I have been able to use Super Mass Transfer in GPL mode, with much better results. In fact, if you combine this with TEXEC, which is EXEC modified to allow use of a single interrupt input from one RS232 port (serial port 1) then the only scanning done on interrupt (EXTINT) will occur to serial port 1. This devoted more processor time to useful scanning for characters, and you can actually connect at a rate of 9600 (true rate) with a line rate of 9600 if you like. I have tried higher rates, but TECEX doesn't really keep up at higher than 12,000 bps and many modems don't allow those terminal rates.

You have to understand that line rates (300, 1200, 2400, 4800, 7200, 9600, 12000 and 14,400) are rates negotiated on the line itself, between the two modems. Your terminal rate must be one of the following (300, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115,200).

If your modem connects at 14400 bps, you must have a terminal rate of at least 19200, to allow for software compression and error correction to work properly. Since at these rates interrupts for programs like TELCO, MASS80, superMASS80, GEN-TRI, etc. usually fail, you must keep the rate at 9600.

If you implement flow control on the modem, this forces the modem to buffer data while the computer is busy. On PC's the buffer is usually built into the 16550AF part, which has a 16, 32, or 64 byte buffer for receiving character overruns when the CPU is busy doing something else, like drawing a screen. For our Geneve we have no buffer and the CPU must read each character before the next one comes in or we lose data.

Tim has made a port work with the interrupt routine in native MDOS mode, using high speed system memory to allow successful interrupt scanning and video (monochrome) update. Color screens at that high speed require a generally slower video mode, and a color interrupter. So you need to enable FLOW CONTROL and the modem must support this feature if it is a high speed modem. Be sure that your modem has HARDWARE FLOW CONTROL, which uses the RS232 pins 4 and 5 to control the flow of data.

This will allow you to use PORT's enhanced color ANSI features and high speed YMODEM-G file transfer routines, and also high baud rates which most new modems use and require for successful data compression and error correction. I normally run PORT at 38,400 with full flow control using the "MIKE" cable design.

TI-----MODEM

2-----3

3-----2

5-----20

7-----7

8-----4

20-----5

The pin 2 is data from RS232 card to modem. Pin 3 is data from modem to RS232 card. Pin 5 of RS232 is used to control DTR signal on modem, for fast hangup. Pin 7 is ground on both modem and RS232 card. Pin 8 of RS232 represents request to send flow control. Internally, the TI RS232 has one lead cut, and jumper soldered. This allows PORT an additional control line to switch this wire on or off independent of whether or not we want to send data. This line is like a faucet which shuts off the modem from sending us data, and the modem can thereby tell the remote system to stop sending data in turn. Pin 20 of the TI is the inbound clear-to-send flow control. It is used by the modem to stop the TI RS232 from sending data. If the modem encounters a line error, or if the distant modem stops flow, then this stops.

The distant modem may encounter errors, or the modems may negotiate data packets, or may be in the process of ringing. These situations must prevent either system from sending data so both clear-to-send lines on both ends are deactivated. These lines (RTS and CTS) are very important because they allow a faster serial device to access a slower computer or host, and the flow lines prevent loss of data. They allow your computer to send data as fast as the remote system can handle reception.

(Thanks Greater Akron 99ers)

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The club's will be:

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Floating on Internet waters

TI users learn to navigate

By JOHN BULL

Have you ever been in a small sailboat on the ocean? Yachts cruise by, leaving you in their wake, but you wouldn't swap places, that is, if you have any sense of adventure!

A few months back I launched my trusty little TI99/4A into the deep, wide, waters of the Internet. Loaded and ready with Myarc 512, Horizon RD, 2400 baud modem, and reliable old TELCO, we signed on Delphi for \$10 per month plus \$3 for Internet access. That gave us four hours per month (more costs more) of net time and I have not wasted a single minute.

First, it took a week or two to master the art of logging on and maneuvering the menus — not hard, but it does take some learning with the help of the Delphi manual. You set up TELCO to dial the local Sprintnet access phone number, oops! — first remembering to tell TELCO to log the screen to Myarc 512. Then a fancy little logon routine with cryptic key presses, then user name and password. Shortly, here comes the welcome message and main menu.

Remember, you are in a little boat in channels charted for big ones. The screen is all 80 columns and you have only 40! Fortunately they pause at the bottom of each 24-line page and <f>5 scrolls left and <f>3 scrolls right, letting you read it all; <center> gets on to the next page. It is not too handy but it works.

The real secret of success is logging the screen to whatever disk memory you have, and sometimes you need a lot. After sign-off you can then load the log files into the Funnelweb editor and read, edit, and save as much (or little) as you want. I use LOG/1 as a filename and TELCO fills it with a buffer-full (10K or so) and then updates to LOG/2, etc., automatically.

Delphi and other nets have all sorts of interesting and valuable things immediately available on-line — the encyclopedia is real handy and I have used it — but the first attraction for me was TI NET, which includes a lively forum and a big database for free downloading of TI stuff.

The Forum includes Tony McGovern as an active participant plus a lot of friendly, knowledgeable people who are generous with advice and information. Did you know that CALL ABSP will abort the contents of the Myarc printspooler? I do now (it is not in the manual) thanks to an inquiry on the forum.

The database is easy to use once you find what you want — it may take some looking since KEY WORDS are not always what they seem. TELCO's Xmodem works flawlessly for me for both downloading and uploading files. My "WINDOWS for the TI" is now there for anyone who wants it. A lot of the program files are for 9640 users, which is good or bad, depending on the point of view. Your boat may be bigger than mine.

Beside the TI Forum, the Internet was the chief attraction for me. E-mail is quick — usually fractions of seconds to deliver. If you know an address, mine is in% "bulljh@delphi.com"; you type MAIL SEND, give the address, add your message, type <c>Z, and it is on its way.

The TELCO macros are very useful for addresses, since e-mail addresses are sometimes long and complex and precision is essential. One wrong keystroke, and it doesn't go. I keep about a dozen addresses as macros that are instantly available with <f>M plus the appropriate single key press.

Editing messages on the screen can be pretty tricky for a low grade typist like me and so I prefer, if they are more than a line or two long, to type them in advance and save them as text files using PF, then C DSKn.filename. This eliminates printer codes, which do not fare well on the Internet. The message can then be placed on the screen with TELCO's ASCII file uploader. It is quick and easy.

Tom Wills has undertaken to keep updated the list of TI user e-mail addresses that he recently published in MICROpendium. His address is twills@indirect.com and he says that he will send the list to those who ask. This should help the TI community stay in touch.

As you may already have heard, the In-

ternet is a *really* big ocean. Plain e-mail is just sticking your toe in. Recently, our local newspaper published the address of a server, LISTSERV, that if asked will send you a complete list of all the lists on the Internet. Well, I asked and I received — about 7,500 listnames, addresses, and descriptions marching up my screen for over two hours! It took all the Myarc 512 plus all available Horizon space plus most of a floppy to get all of it. Are you interested in dogs? Which breed? There is a list for you! A list for almost every conceivable interest! It took several more hours with Funnelweb to edit the 7,500 down to about 150 lists that might have some interest to me or my friends.

Several of those 150 looked really interesting, so I picked out one in my professional field and sent an e-mail message saying SUBSCRIBE, as instructed. In the next three days there were more than 350 e-mail postings to my address and they must have averaged two typed pages each. Most were amateurs holding forth without limitations — if they felt like saying something, they did so, and at length. My Delphi mailbox began to fill up with much more than I had time to read. How to stop it? Easy! Just send e-mail, RESIGN, and they quit sending.

There was one big plus from the experience — a friend from 40 years back was author of one of the first messages and that has led to a pleasant renewed contact via private e-mail. You never know who you will meet!

Finally, how does the TI99/4A perform on the Internet? Plenty well enough to be fun and valuable. Anything that is in plain English, ASCII text, or TI program files can be handled. The whole ocean of material that can be found through gopher and its helpers is right there for the taking. Thousands of interest groups, some matching your interests, are just waiting for you to join them. Windows, a really fast modem, and a few megs of memory, for instance, would add capabilities that we do not have. Thank you, but *no!* My own little sailboat is more fun.

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