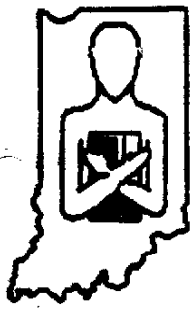

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THE HUGgers
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People Helping People

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August 1989 THE HUGgers NEWLETTER Volume 7, Number 7

H.U.G. BBS UPDATE

Those of you who may have tried the Bulletin Board recently would have noticed that it is down.

Unfortunately, it was hit by lightning during one of those thunderstorms we had in mid-July. Hopefully the damage will be found to be minor and we will be able to have it back on-line soon.

OFFICERS

PRESIDENT....JOHN POWELL 786-3270
VICE-PRES.....CARL CLARK 1-398-6226
LIBRARIAN..BRYANT PEDIGO 253-7381

****
* *
* AUGUST *
* SPECIAL MEETING *
* & PARTY *
* *
* August 20, 1989 *
* 3:00 p.m. *
* *
* At the home of Gary *
* McQuade. See page 5 *
* for details. *
* *
****

TELCO Quick Reference

Southwest 99ers Mar 89

TELCO Editor Key Functions

Fctn-1 Delete Character at cursor
Fctn-2 Insert Character at cursor
Fctn-3 Delete line
Fctn-5 Clear Input
Fctn-8 Insert line
Fctn-S Left Cursor
Fctn-D Right Cursor
Fctn-E Cursor up
Fctn-X Cursor down
Ctrl-A Clear all tabs
Ctrl-B Set Bell
Ctrl-C Clear Tab
Ctrl-P Place Tab
Ctrl-R Set Right Margin
Ctrl-S Show Tab Line
Ctrl-T Tab

TELCO Terminal Function Keys

Fctn-1 Auto Dialer
Fctn-2 Print Spooler Toggle
Fctn-3 Window Left
Fctn-4 Download files (Page Down on Geneve)
Fctn-5 Window Right
Fctn-6 Upload files (Page Up on Geneve)
Fctn-7 Help
Fctn-8 Review Buffer
Fctn-H Hangup
Fctn-M Macro Select
Fctn-Y Screen Setup Options
Fctn-N Full/Half Duplex toggle
Fctn-L Log open/close
Fctn-/ Log Mode
Fctn-J Window Lock toggle
Fctn-V Status line toggle
Fctn-. (function-period) Conference Mode
Fctn-B Reset Clock
Ctrl-2 Clear screen locally

TELCO Review Buffer Function Keys

Fctn-1 Top of review buffer
Fctn-2 Bottom of review buffer
Fctn-3 Window Left
Fctn-4 Window Down
Fctn-5 Window Right
Fctn-6 Window Up
Fctn-7 Help
Fctn-8 Screen Dump to a device
Fctn-P Purge review buffer
Fctn-E Line up
Fctn-X Line down
Fctn-S Colum left
Fctn-D Colum right

TELCO Auto Dialer Function Keys

To view the list of numbers use:

Fctn-4 Page down
Fctn-6 Page up
Fctn-X Line down
Fctn-E Line up

TECH TALK by Mike Maksimik
From the Chicago Times

Some of you may have followed TI's developments in the time that the 99/4A was at it's childhood. All sorts of plans, marvels, new things for the home computer that "was ahead of it's time." There were several peripherals developed by TI but were only released in tiny quantities, mostly to the TI employees that got the pick of the crop. Some of these never made it to the production lines, but only a few prototypes survived.

The modem card, which essentially was a Novation Cat 300 baud modem, was placed on a peripheral card, and a DSR ROM was given it to control very low-level functions, such as modem-to-vdp RAM interrupt routine, powerup routine, etc. It would work with a command module, like TE II just as the disk manager module works with the low-level routines in the disk controller to perform the DDS functions. Only a very few of these survived. Another little known card was the IEEE 488 bus controller card. It contained the TMS9914 GPIB (general purpose interface bus) that allowed the lab and mechanical equipment that used GPIB to interface to the TI. One could access the GPIB like a file device. This same standard is found in unexpected places. Any of you have a commodore 64? The communications bus used to connect it's ring-style bus of peripherals is a modified GPIB, one of commodore's own design. The SCSI interface (small computer systems interface) is essentially a multi-GPIB, allowing very fast buffered serial transfer between storage devices. SCSI also has interrupt lines to alert the host that data is waiting to be read or written. The VDR controller, a $500.00 range peripheral, along with support software, was introduced as a means to combine video from a VDR and the video from a TI. The card would control playback, hold, framing, and other functions. Digital Research created a similar product to control videodiscs that attached to an apple or a commodore 64, although much later than TI's development. The debugger card, a little known device, was in existance when the 99/4A was born. In fact, it's design can be rooted to the support hardware in the 990 minicomputer series. Essentially, the TMS9900 is a minicomputer on a chip. The editor/assembler GROM was a virtual image of the DX10 assembler used on the 990 minicomupter. Some directives one would only find on a minicomputer exist in the editor/assembler package, but were dormant in the 99/4A. The debugger board was designed to bring the 99/4A closer to a minicomputer's environment. The DEBUG program, included with the editor/assembler package, has several features that cannot be used without this piece of hardware. In fact, the editor/assembler looks as if it was taken direct from a 990 itself. The only added features were the GROM utilities, sucha VMBW, DSRLNK, LOADER, etc. that didn't support the features that a 990 could handle. It's too bad that TI wishes to keep the plans for this card on ice, it would be a dream to program with. It allowed multiple breakpoints by using the XOP 3 opcode, which would allow you to step your program through and look for errors or miscalculations. Although we can do this through software, the debugger board used a hardware approach. The design of this board, and what it contained, are up for grabs. If anybody knows, i'd appreciate you sharing with the rest of us. Send me a letter. Still another rare peripheral was the GROM library peripheral. It essentially was a super-widget that could access ALL of the GROM in the cartridges. This would be handy for TI BASIC, since TI BASIC searches external GROM for subprograms. TI extended BASIC does this too, but doesn't search DSR ROM when a program is running. Modules like TE II, personal record keeping, and extended BASIC could all be plugged in and the CALL routines could be accessible to BASIC. BASIC could use the commands it wished to whatever, and all you had to do is plug your favorite "flavor" modules into the library peripheral to get the necessary language expansion. Imagine a GROM cartridge giving advanced graphics to TI BASIC, another for print spooling, still another for expansion memory control. Others for high speed cassette routines, etc. so the

language could expand by adding cartridges. It's the same technique used with the peripherals: the computer never becomes obsolete, because it automatically responds to any new device attached. This is true of the library peripheral. This is another device I would LOVE to see.

Some of us have the HEX-BUS controller. In the days of the 99/2, the CC40, and the 99/8, the hex-bus controller was introduced for the 99/4A to allow compatibility with these devices. Essentially, they were designed like the commodore 64's peripheral system, where a slow serial transfer was appropriate for the hex-bus devices, a disk drive wouldn't be feasible. So TI never considered the HEX-BUS disk drive. The Wafertape drive, the CAT modem, the RS232/parallel interface, and the 4-color printer, were all developed. All were battery operated and could fit in a briefcase, as did the CC40. For the 99/4A, it was an inexpensive means to expand.The hex-bus controller was a small device containing a DSR ROM that controlled the I/O drivers which "spoke" to the hex-bus peripherals. Since the main use was for the CC40, it wasn't pushed for the 99/4A. The 99/8 could also rely on the PE BOX for it's devices. It had it's own special FLEX CABLE card, which used some special control lines to expand it's own capabilities. Since the 99/8 used a TMS9995, the same as the GENEVE, it could use the extra 3 address lines in the PE BOX, giving a total address space of 2 to the 19th power, or 512 k of directly addressable memory. Since some of these banks were probably switched, the address space grew to a total of 4096 k, which is sufficient for MOST of my needs. The speed of this processor was greater, and it's throughput was even greater, but more on that later. Some other control lines were used, some to indicate a 9900 or a 9995 present in the system, some to allow multi-level interrupts, still others to initiate HOLD sequences, which are found on the mainframes, and large multi-user systems as a way to deal with wasteful processing, and interrupt idling. TI had a HARD DISK controller in the plans, probably MYARC's, but the technical data I have is 1982. I own a rare card. Some of you may remember a company called A/D electronics, out of Sacramento, California. They produced a control card which allowed sampling of environmental data through an 8-bit analog-to-digital controller. This device allowed hookups of many items, such as temperature probes, light transducers, etc. and was mainly used as a scientific device. Some possible uses included home control, because it also contained a real-time battery backed clock. Plus, there were separate digital inputs and outputs, for switches and relays, respectively. My main use for the A/D card, FIRST ADE, is a mouse. The RADIO SHACK color mouse contains two potentiometers turned by a rolling motion of the mouse. The potentiometers, when interfaced with the ADC0809 chip, (two channels, x and y) gives me mouse control with TI ARTIST. I wrote the DSR myself, and have been using this device for about a year and a half. The MBP clock card is a similar device, although it does not contain a digital input or output array. The ADE card, however, could also switch external relays, or sample data on 16 lines (8 in, 8 out). If timing was correct, an 8-bit parallel interface was possible. I still use this card, and the clock is handy for keeping my p-system master disk up-to date. The FORTi music card was a device which allowed one to produce sound on not one but 4 extra TMS9919 sound generators. By arranging the frequencies on the 12 music channels available, different waveforms were possible. Now, with the FORTi, sounds even a c-64 owner could envy were possible. And, there were 4 percussion channels independent of each other. I can imagine "AXEL-F" running on this card!! And of course, we all know of the more common peripherals, the triple tech, the disk controllers, the 32k cards, the rs232 cards. Even these make our computers sophisticated enough to meet TI's long dead expectations. I also own the p-code card, and another article is devoted to THAT!

TO BE CONTINUED NEXT MONTH

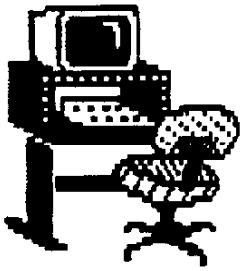
TALKIN' SMART
by
JIM ELLIS
Part VI

(Cont' from previous issue.) The following is the start of the "Hayes" commands that are used. The chart is an attempt to help you understand the more common commands in use. Please note that NOT all modems acknowledge ALL commands. You can refer to your manual to establish which ones your unit uses. Again the chart is an attempt to help you understand the different uses. There will be more of the chart appear in further issues.

DIALING COMMANDS		
CODE	COMMAND	FUNCTION
A/	Repeat	Repeats LAST command, (enter) not required
Cn	Carrier	Carrier control.
		C0 - turn carrier OFF.
		C1 - turn carrier ON immediately.
D	Dial	Must precede all dial commands.
T	Tone	Touch tone dialing
P	Pulse	Rotary dialing
W	Wait	Wait for second dial tone
@	Wait	Wait for answer, then dial extension
,	Pause	Pause for second dial tone (call waiting disable)
&Z	Store	Store phone # in non-volatile memory
S	Dial	Use after S command to dial # in memory
R	Reverse	Put modem in answer mode when calling originate type modem
		Reverse send and receive frequencies.
;	Command State	Return modem to command state after dialing
!	Flash	Hang-up for 1/2 second, used to transfer a call

CONTROL COMMANDS		
+++	Escape	Return to command mode without hanging up
O	On-line	Go on-line after +++ command
$	Help	Display serial port settings and give advice
*H	Help	Displays HELP menu.
*T	Time	Displays current time.
*Tx	Time	Set date and time.
A	Answer	Send answer tone and try to connect with modem calling in
Hn	Hang-up	0 = On hook (hang up)
		1 = Off hook
		2 = special off hook
En	Echo	0 = no echo
		1 = echo commands to screen
Fn	Duplex	0 = Half duplex
		1 = Full duplex
Mn	Speaker	0 = Speaker OFF
		1 = Speaker on while dialing
		2 = Speaker always ON
Ln	Volume	0 or 1 = Low volume
		2 or 3 = High volume
In	Product	0 = Product code revision
		1 = Checksum of ROM
		2 = Checksum OK
Z	Reset	Soft reset
Bn	Bell	0 = Use CCITT signals
		1 = Use Bell signals

(to be cont'd.)



PARTY TIME

AUGUST 20, 1989

The next meeting will be a meeting and party combined. It is requested that you bring a covered dish. Hamburgers and hotdogs will be furnished along with drinks. 2.50 per person to cover expenses. Swimming will be available so bring your suits. The library will also be available for copying.

PLACE 6534 MARGARET CT.
TIME 3:00 PM
RSVP GARY MCQUADE 888-5654
So I will know how many are attending.

TIME DATED
August 20 1989
MATERIAL

89/10 781DE

Dan H. Eicher
4410 Cardinal Drive
Indianapolis, IN 46237

HOOSIER USERS GROUP
P.O. Box 2222
Indianapolis, IN 46206-2222

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1989

APPLICATION FOR MEMBERSHIP

Below you will find an application for membership to the Hoosier Users Group. Active membership entitles you to the Newsletter, up and download on the HUGbbs, attendance and voting rights at regular club meetings, access to the HUGger Library of Programs, special club activities and special guest speakers for one year. Subscribing members will receive the **NEWSLETTER** only.

Make check or money order payable to **Hoosier Users Group.** Send completed application to:

HOOSIER USERS GROUP
P.O. Box 2222
Indianapolis, IN 46206-2222

(Cut on dotted line)

Check One:

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New: $20 _____
Renewal: 15 _____

Subscribing Member

New: $10 _____
Renewal: 7.50 ____

Amount Enclosed: $ _____

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S ______

Name: ____________________ Today's Date: ________

Address: ________________________ Apt. # _____

City: __________________ State: _____ Zip: _______

Phone: (_____) _____-______

Interests/Comments: ________________________