BITS,BYTES&PIXELS

LIMA 99/4A USERS GROUP

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THE NEW FUNNELWEB v5 TEXT EDITOR

described by Charles Good
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Tony McGovern has released a "completely rewritten from source code" Funnelweb version 5 80 column editor dated Dec 15, 1992. A similar 40 column version will follow soon. I have a beta test edition of this 40 column editor. These v5 editors are designed to run from the Funnelweb v4.4 environment. So far, the only "version 5" parts of Funnelweb are the text editors. They are fully multi-lingual and compare favorably with Asgard's new FIRST DRAFT word processor. New features, added or revised since the v4.4 editor are summarized below.

HOW TO OBTAIN THIS SOFTWARE:

The 80 column v5 editor files are being sent by the Lima Ohio User Group to members and user groups on our mailing list thought to have 80 column systems. ANYONE, not just members, can obtain these and some supplementary files (extra help screens, demo text files etc) in DSSD unarchived format by sending 2 disks and a self addressed stamped return mailer to us. Also, WHEN they (soon) become available, we will send the 40 column editor files to ALL groups and members on our list. ANYONE can obtain the 40 column files by sending us 2 disks and a paid return mailer. No money is required, but a fairware donation directly to the author will be appreciated. Send requests to me at Lima Ohio User Group, P.O. Box 647, Venedocia OH 45894.

HELP SCREENS AND MULTIPLE FILES IN MEMORY:

FIRST text in memory - the edit buffer:

SECOND text in memory - the help screens:

When the 80 colum editor first boots it loads into memory up to four help screens. These can be viewed from the command line by pressing H(elp). Each screen is 26 lines by 80 columns and they pop up on screen immediately because they are already in VDP memory. The Program Editor loads one set of help screens relating to assembly language coding. The Word Processing editor loads another set of screens more appropriate for help with text editing and formatting. You can move back and forth from one help screen to another by pressing the B and A keys. FCTN/9 returns you back to the edit buffer. Sets of useful help screens are provided, and the user can also create personalized help screens. A utility is provided to convert the first 26 lines of any DV80 file into an 80 column help screen. (The 40 column editor will have 28 line by 40 column help screens. An unlimited number of these screens can be loaded into memory one at a time from disk by pressing H(elp) from the 40 column command line.)

THIRD text in memory - screen viewing:

As in the v4.4 text editor, one can do a S(how) D(irectory), move the cursor next to a DV80 file name, press a key, and display a screen of that file. Subsequent presses of the same key window down through the entire file. There is no limit to the size of the file that can be viewed one screen at a time in this manner. This file isn't really stored in memory, just displayed on screen.

FOURTH text in memory - the V(iew) buffer:

From S(how) D(irectory) you can put the cursor next to the name of a DV80 file, press CTRL/V and load the whole file (or any part of it) into a 64K memory buffer for instant recall any time during the editing process. Once loaded into the V(iew) buffer the file can be scrolled one line at a time or windowed up and down very rapidly. Pressing <enter> from within S(how) D(irectory) or V from the editor command line pops this text into view. This V(iew) buffer can hold very large text files. It is in fact the same memory area as Funnelweb's Disk Review "V" text buffer. You can load some text into the 80 column editor's V(iew) buffer, exit the editor to a central menu, and from there go to Disk Review. After performing some disk management functions from Disk Review, you can go back to the 80 column text editor and the V(iew) buffer text will still be there! You can also load ANY KIND OF FILE into Disk Review's V(iew) buffer. Then if you exit Disk Review and go to the 80 column v5 text editor this text will be waiting for you in the editor's view buffer. Just press "V" from the editor's command line to see the text you loaded into Disk Review! (Because 40 column systems have only a limited amount of VDP memory, this V(iew) buffer feature is not available from the 40 column v5 editor.)

FIFTH text in memory - the ST(ore) buffer:

From the editor command line you can press ST(ore) and move the contents of the edit buffer into temporary storage in VDP RAM. You can then load another file into the edit buffer, edit the second file and save it back to disk, then press RE from the command line to RE(call) the ST(ore)d text back into the edit buffer. The ST(ore) buffer acts as a temporary ramdisk, but is much faster. Text files are saved and loaded to horizon ramdisks one record (line of text) at a time. This is fast but definately not instantaneous. Large files take 10s of seconds to load and save with a horizon. The ST(ore) buffer response time is immediate! It is too bad you can't exchange text between the edit and store buffers. Tony says this trick would eat up lots of memory and that's why such a featurehas not been included. (ST and RC to and from VDP RAM is not available from the 40 column v5 editor.

NEXT PAGE

There isn't enough memory.)

NEW FILE SAVING AND PRINTING OPTIONS:

These are available in both the 40 and 80 column editors and are accessed via the P(rint)F(ile) command. You can configure the editor with printer codes. Then every time you insert a "P" in front of the printer name (such as PF <enter>, P PIO) the editor will send these preconfigured codes to the printer before any text. I have my v5 editor set up to send the "print all the following in emphasized print" command. If I also use a "Q" with PF the editor will send a printer reset code to the printer after all text has been printed (PF <enter>, P Q PIO).

You can append the contents of the text buffer to the end of an existing disk file by specifying the disk file as the printer device preceeed by an "A" (PF <enter>, A DSKx.FILENAME). DV80 files of unlimited size can be created this way. I build multiple choice exams for my students this way, one question at a time taken from question lists I have stored as DV80 files.

You can also use PF to create DF128 text files readable directly by MS-DOS and Unix software.

NEW POWERUP OPTIONS:

Normally the v5 editor boots in either Word Processing or Program Editing mode depending upon which of Funnelweb's central menus is used to select the editor. However, if you hold the space bar down as the editor loads you get a list of choces. The editor can be pre-configured to always give you this list of choices without pressing the space bar or to automatically boot as any one of the choices uness you press the space bar.

1. Word Processing
2. Program Editor

Then you get these choices:

1. Default 7-bit
2. National 7-bit
3. TI Euro Writer
4. All Chars.

If you want the resulting disk file of your document to be readable by someone else on another computer using anything except Funnelweb v5 (such as an earlier version of Funnelweb, or TI Writer) then select items 1 or 2 from this menu. Items 3 and 4 from the above menu do some fancy stuff (more about this later), but produce disk files that can only be read and displayed on screen properly with Funnelweb v5.

After you chose one of these options, you are given the following choice of languages, comparable to what is suggested by the TI Writer module:

1. Australia---My 40 column beta test editor lists this as "default". This is the one USA English users would choose. It uses character sets C1 or C2, the same character sets used by the rest of Funnelweb. This is the only option that does not load in additional character and command sets from disk.
2. British---Choosing this loads in a separate character set that redefines SHIFT/3 as the British pound sterling symbol. In all other respects "2. British" is the same as "1. Australia".
3. France
4. Deutschland
5. Italia
6. Sverge
7. Nederland
8. Espania

Choosing a non English language loads in foreign language character sets that redefine little used keyboard characters such as FCTN/A, FCTN/F, FCTN/W, etc as appropriate foreign characters. Most of these foreign characters are vouls with accent symbols over them such as umlaut, grave, acute, or circumflex. These character sets and their ASCII values correspond to some of the international character sets 1-9 found on most modern printers. This means that if you send a control code to set your printer for the appropriate foreign character set then the foreign characters you see on screen will be printed properly. From the editor the epson compatible printer key sequence with no spaces between keypresses is CTRL/U FCTN/R CTRL/U R CTRL/U SHIFT/A thru I CTRL/U where A-I specify the particular character set (1-9) desired. For Genimi 10X and SG10 printers substitute 7 for R in the above key sequence.

Non-English languages also load appropriate foreign text into the command line and change the command abbreviations to reflect the foreign language. For example, in French "Imprimer Fichier" means Print File, and you use the command IF, not PF, to print stuff. The Swedish version has "Lagra Filer" for Save File. The command LF in the Swedish text editor will save (not load) a file. This can be disasterous for English speakers who don't know Swedish.

Not all the foreign commands and command line text are finished. English, German, and Swedish are complete. French and Dutch are almost complete. Spanish hasn't been started. Sample source code and a utility that creates foreign commands and command line text are included for those interested in expanding Funnelweb v5's multilingual capabilities.

EURO-WRITER:

In Europe, TI released a multilinual version of TI Writer (TIW v2) with some special features. By selecting EURO-WRITER from the powerup menus, the Funnelweb v5 editor provides all the features of the TI Writer v2 editor; specifically an intuitive way of adding accent marks to vouls.

NEXT PAGE

When in Funnelweb's EuroWriter mode you have access to the foreign character set of the language you select from the powerup menus, and these character sets include some, but not all, accented vouls. But there is another intuitive way to create accented vouls that lets you put ANY ACCENT over ANY VOUL. Type a voul, either upper or lower case. Then backspace to put the cursor back over the voul, type any of four FCTN/key or CTRL/key combinations, and an umlaut grave acute or circumflex mark will appear on screen over the voul! The only problem is that these voul/backspace/accent screen displays are coded with high ASCII numbers above 127 and don't normally print properly. You need to print text files with these accented vouls using the European formatter (also multingual), the formatter that TI included with TI Writer v2. You need to use special transliteration files that rededine ASCII codes greater than 127 as accented vouls. This formatter with its auviliary language and transliteration files is not part of the Funnelweb v5 editer package, but the files can be obtained by anyone from the Lima user group. Unfortunately, the European formatter REQUIRES use of the TI Writer module. It hasn't yet been modified to run easily out of the Funnelweb environment using something other than the TIW module to boot Funnelweb. Also, transliterations to print some of the accented vouls are less than ideal. Accentd vouls you see clearly on screen with Funnelweb's Eurowriter mode may look strange when printed.

ALL CHARS MODE:

Our 99/4As normally can directly type ASCII 0-127 with ASCII characters below 32 accessed from CTRL/U "special character mode". But our 8 bit computer is capable of generating codes 0-255. When high ASCII codes >127 are sent to a printer during text printing the printer will print graphic symbols. A common standard for these high ASCII graphics is the IBM character set #2 found on most printers. High ASCII codes sent to a printer with IBM graphics #2 enabled print line shapes somewhat comparable to the "lines" font of Page Pro that prints those neat borders and page dividing lines. Check your printer's manual to see what these graphics look like.

[SPECIAL NOTE FOR STAR SG10 PRINTER OWNERS: There is an undocumented software method of switching from STAR mode to the IBM character set #2. You don't need to use a dip switch. The code with no spaces between keypresses is CTRL/U FCTN/R CTRL/U w CTRL/U SHIFT/A CTRL/U. To switch from IBM set #2 back to STAR mode use this code: CTRL/U FCTN/R CTRL/U w CTRL/U SHIFT/2 CTRL/U. The w in these codes is lower case.]

Selecting All Chars mode with the Funnelweb v5 editor allows you to directly type on screen and print to the printer ASCII 0-254 of the IBM character set #2. This includes all the normal upper and lower case letters numbers and keyboard symbols, plus the graphic symbols coded by high ASCII numbers. To type the graphic symbols type CTRL/, (control and comma simultaneously) and then each keypress will produce a graphic symbol. To return to the keyboard normal letters type CTRL/, again. Normal letters and graphic symbols remain on screen as you use CTRL/, to toggle the keyboard back and forth beteen graphics and normal. Graphics and text print normally using PF (PrintFile). You don't need a formatter to print these graphic symbols.

SOME OF THE OTHER NEW FEATURES:

--You can move text up and down from within the command line. This is very handy for M(ove lines)), D(elete lines), and C(opy lines) operations. You don't have to remember line numbers. Go to the command line and type M, D, or C. Then use the arrow or up/down screen keys to display the first line number and last line number so that you will enter the proper numbers to M, D, or C.

--From the various fixed modes with an open box cursor (Program editor or WP with word wrap off) you can break lines at the cursor, insert text, then rejoin with the next text line. This means you can insert text into the middle of a paragraph from a fixed mode without losing existing test off the end of the right margin, something no other version of TI Writer will allow.

--Typing a number in a blank command line followed by <enter> will put that line at the top of the screen and return to edit mode (S before line number not necessary). <Enter> from a blank command line returns to edit mode (E prior to <enter> not necessary).

--You can freeze the display beginning with the line below the cursor while continuing to scroll, window, and edit from the cursor line to the top of the screen. This means you can simultaneously display two parts of the edit buffer with full editing capabilities for one of these displayed parts.

--You can put a bookmark (mark the text) at any line number from either command mode or edit mode. Later you can put the cursor on this text with FCTN/= even if the text has been edited since marking.

--You can display the contents of any hard drive path from the command line similar to doing a SD. Enter "HD" from the command line, then type a path name and press enter. The resulting display of that directory's file names resembles the SD display, and you can mark DV80 files for loading into the editor. This should be great for hard drive users who have trouble cataloging their hard drives with existing software.

--From SD or HD two diffent files can be marked, the regular and "temporary" file. These can be loaded into the editor with LF (regular) and LT (loads the "temporary" file).

--A user definable wild card character can be used the string searches with FS and RS.

--The SD display shows the number of bytes remaining in the edit buffer.

--When you load, print, or save files an incrementing number in the upper right of the screen shows the current line being loaded into or out of memory.

NEXT PAGE

CONFIGURING THE EDITOR --
WHICH v5 EDITOR FILES ARE REQUIRED?

Just the 80 column editor, without other parts of Funnelweb, comes on an almost full unarchived DSSD. There are lots of files, mostly foreign char sets and command line text. This disk as distributed by the Lima User Group has DSKU commants added by me to each of the files. These comments should aid in figuring out the purpose of each v5 editor file.

If you want only word processing in English then put ED, EE, and HELP00 10 20 and 30 on your Funnelweb v4.4 working disk or directory. If you want to play around with All Chars graphics add file CHAR01 to this list.

You should use INSTALL/ED and a modified CONFIG/ED to configure the Print File "P" and "Q" printer codes into your

NEXT COLUMN

ED file, but these two files don't have to be kept on the Funnelweb work disk. Funnelweb's v5 editor can be configured with CONFIG/ED to immediately boot to any of the available languages, or to boot to the powerup menu selections. No matter how the editor is configured, if you hold down the space bar as the editor boots you will get the powerup menu selections.

If you want use the full multilingual capabilities of the v5 editor then you need all the CHARxx and FBTXxx files on your Funnelweb work disk.

The various utilities for configuring the editor, making your own help screens, making your own character sets, etc have an undocumented feature. They respond to FCTN/7 (AID) by invoking the Quick Directory if files QD and QF from Funnelweb v4.4 are on the Funnelweb work disk.

**** ALL CHARS SCREEN DISPLAY (toggled on/off with CTRL/comma) ****

Symbol shown on key>>>	(Top row) 1234567890=	(2nd row) QWERTYUIOP/	(3rd row) ASDFGHJKL;	(Bottom row) ZXCVBNM,.	(FCTN keys) ßÄÜ_?'"öäüö'	Space bar
lower case	▓│┤┤┐┐┤░┘	±≈σ≥⌠·⌡ΘΠ≡»	ß≤ΣµτΦΩδφ┐	-°π÷Γ€Ø¼«	■█▀┐ºóⁿ√²▄α	á
CTRL/U and lc	±≥≤⌠⌡÷≈°·≡²	▒┐Ñ▓││┤┌»░Π	í│ñªº¿¬½¼√	│┐Ú┤ó«ìφ€	┘¢¥ƒ ┬┌┘┐┘£á	α
SHIFTed keys	í└úñÑ▐ª¬¿⌐½	┬┼┼┬┘┌┌┴┴¡	┴└├├└┬╫│	┌┼┼┌┬┼┘┘		
CTRL/U &SHIFT	ßÇπΣσ₧µΩΦΘδ	æüàÆöòòëÅ£Ø	üôäâçêèïî-	ûÿâûéÄìⁿ■		

NATIONAL CHARACTER SET
(Keystroke-ASCII-Display)

Keystroke	ASCII	Display
SHIFT/3	(35)	#
SHIFT/4	(36)	$
SHIFT/2	(64)	§
FCTN/R	(91)	Ä
FCTN/Z	(92)	Ö
FCTN/T	(93)	Ü
SHIFT/6	(94)	^
FCTN/C	(96)	`
FCTN/F	(123)	ä
FCTN/A	(124)	ö
FCTN/G	(125)	ü

THIS IS PART OF ONE OF MY CUSTOM HELP SCREENS. ABOVE IT SHOWS THE IBM CHAR SET #2 AS PRINTED WITH MY STAR SG10 PRINTER. ON OTHER PRINTERS THESE GRAPHICS ARE SIMILAR BUT USUALLY MORE DETAILED. TO THE LEFT YOU SEE THE GERMAN "NATIONAL" CHARACTER SET, WHICH IS INTERNATIONAL CHARACTER SET #2 ON MOST PRINTERS.

****DONE****

LETTER from AUSTRALIA - No. 3 Dec / 92

It is quiet at the back door of Funnelweb Farm these nights and we are pretty sad about it. No possums come there any more, and as far as we can tell those two have been the victims of large dogs. One was a tiny orphan when it first came, and for some while we had to give it a finger to rest one front paw on for balance on the narrow ledge while it ate the bread or fruit with the other. Haven't seen any of the big lizards around in the yard for a while either. I just find it difficult to understand why some people come to live in a area next to Blackbutt Reserve, the major nature reserve in Newcastle City, and then keep large dogs and many cats which wreak havoc on the native wildlife. Cats are natural hunters and prey heavily on small animals and birds, even the domesticated and fed ones are estimated to kill about 30 birds a year. Curiously enough cats are immune to funnelweb spider venom, so they don't help. Cats that have gone feral are a major problem even in the remotest areas of Australia, and "feral" is one of the current buzzwords in the Australian vernacular. An adult possum is a match for a domestic cat, but a small possum or a mother hauling around a baby might not be. Dogs are the problem there. Same goes at Hawks Nest where the koalas are in danger from dogs, and in even more danger under pressure from developers and tree haters. There used to be a slow moving old golden retriever next door, who was always lazing around our place to soak up affection and co-existed with all the possums and lizards for years. Recently a whole bunch of rather more vicious large dogs have moved into the area. Rottweilers and pit bulls running loose do not make me smile. The main offender, and we suspect it as the possum killer, is a large black hairy dog a few doors away. When this bitch is on heat, packs of dogs of all sizes gather around, which is mostly when we see the others. No cloud is without its silver lining though. Whatever dog is murdering the possums is also killing all the cats in the neighbourhood, and giving the birds a chance. One of the most soul restoring things around here is to listen to a pair of whipbirds calling away. They are just small nondescript dark-colored birds that flit around the branches in dense bush, but make a noise like the whistle and crack of a stockwhip.

After the US elections Arkansas seems to be everywhere. Even invades the music programs. Usually when computing I have the radio on, and one time I thought I must have been listening to one of John Briscoe's Jimmy Driftwood tapes. No, it was Radio National, the public broadcaster. Even found a Sydney record store with a stock of bluegrass CDs during the year. I bought what I could afford at the time which at the ripoff prices charged in Australia was not very many, but last time I looked it had closed up.

Will was out last night at what has become a Newcastle institution - for some years now on the Friday night preceding Xmas the Santa Claus Pub Crawl takes place. It does boggle the mind a little to think of 700 Santas and helpers carousing their way across the city, but it usually seems to go off peacefully enough.

Actually there was a substantial break in programming here. Thre was great pressure to reorganize the computer room cum drawing office. It was just to be a couple of shelves put up. The idea had been resisted passively for a long time, but Val brought it to a head by going out to a commercial shopfitters and buying some wall standards and brackets. This left no excuse for not using those lengths of 10" by 1 1/4" stair tread bought years ago at a closing down sale at a joinery works. So the TI was packed away, and the drawing board dismantled. Then the fun started. It seems that you may not fix shelves without first filling the cracks in the plaster, even the historic ones that predated the Newcastle earthquake. Then the repainting ..... I managed to stop the process just short of digging up the foundations. So now the TI is newly installed in glory alongside the 486 PC, with the old Amiga 500 squeezed in beside it. One of these days I may even have them talking to each other, but I never could get a updated RS232 ROM from DIJIT to allow terminal programs to run with the AVPC.

Very curious what is happening in the PC business. Reminds me of another time and world far far away, when a certain company brought out a Home Computer with a then powerful processor but slugged it down with layers upon layers of interpreted code to give a slow user interface, but one very easy to use even by current standards. Now I look at Windows or OS/2, and there does not seem to have been all that much improvement in speed. Layers upon layers of software repainting screens at a crawl on 33 Mhz 486s that are more powerful than many computer centers could boast of at the time of the first TI-99s. Ever notice how 40 columns or thereabouts has reappeared? Unless you have a monitor of resolution beyond the reach of most home budgets, by the time you have a window out of many, you have only room in it for very limited amounts of text, about like an old 99/4a screen. Those ads you see of screens with layers upon layers of windows are pushing a scene that is intrinsically useless.

As all my recent work on the TI has been on new editors, and there is a PC a meter away running OS/2, I have been reflecting on the fundamental approaches to editing text on the two machines. I am quite comfortable with the OS/2 System Editor - after all it is in the same tradition that I first encountered with Turbo-Pascal on a CP/M machine. But there is one consistent feature that annoys me every time I use a PC. This must go right back to that awful CP/M system that grew into MS/DOS. It is that you cannot use the cursor keys to put the cursor anywhere on the screen that you want to, even on machines running massive resources in full graphics mode. All you can do is move it over areas you have already typed on. As those of you who have ever corresponded with me know, my normal mode is pen and paper (for people to read - editors and diskfiles only if a machine needs to read

NEXT PAGE

it) and when I put pen to paper I do not have to trace each line to get where I want. Maybe Constable Plod needs to, but most of us treat a blank page as randomly accessible. Guess which editor is people-friendly rather than teleprinter friendly, and does things just the way we do - good old TI-Writer - where you can position your pen and make your mark wherever you want. Maybe the longevity of the TI-99 system is not so surprising after all. One thing the PC is good for - I can play OS/2 Solitaire while the TI grinds away slowly on long batch assemblies.

When pondering on continuing HRD-3000 problems I realized that I had never seen a thorough discussion of how RAMdisks and the like fit in with the TI system in so far as CRU base address settings and machine capture on power-up are concerned. Writers of HRD ROSs obviously have faced the problem, but it is worth chatting about in public. During power-up the monitor program in a standard TI-99 system amongst its other housekeeping chores, sequences through the peripheral CRU base addresses and at each one executes the power-up routine if the card has one, and finally executes from GPL any cartridge power-ups in the GROM library. TE-2 snatches some more VDP memory below the disk buffer area, possibly for text to speech work area. The nature of the routines varies from device to device. For instance the TI disk controller spins the drive motors briefly, while Myarc FDCs do not. This is the point at which a device may capture control of the machine from the monitor - all it has to do is usurp the monitor and not hand back control. TI made two well known but not common devices which did capture the machine this way - the p-code card and the the Plato module. Notice that Plato, being a module, was the last little piggy of all at the power-up trough, while p-code at CRU base >1F00 was the last card to be found in the PE-box. Also there was only one possible peripheral master in the system, the p-code which did not care about the cartridge anyway. This meant that every other peripheral box card in the system could do its own initial housekeeping first.

Now with the introduction of Horizon and similar devices with re-programmable DSRs and switchable CRU bases, it is possible to have the user configure a card to capture the machine from any CRU slot, and also hand over to the cartridge at any time later. This implies that for correct operation of the system, the card which captures the machine must take the place of the monitor and execute the power-up routines of all cards normally later in the search, and strictly, resume the monitor power-up sequence at the cartridge rather than just starting the cartridge. Fortunately it doesn't seem to matter for XB which is the only module GROM normally entered from programs loaded at several stages of remove from a HRD power-up capture. The TI system specs allow for power-up to use GPL workspace registers R0-R10. R12 contains the CRU base address and R13-R15 are already set up. The various documents do not all agree on just what PAD RAM is available. The 1983 System Software comprehensive spec says PAD+>4 to PAD+>BF may be used, but does not mention any of the specific bytes to be preserved, when clearly the VDP pointer at PAD+>70 is important information for other DSRs at the very least. Why does this matter? Well, if a card is to execute power-up routines in other cards it must run from code placed outside its own DSR ROM and this must not be killed by other power-ups. Why outside the DSR ROM? Only one DSR can be active at a time - you switch yourself off before switching the other one on. The p-code did not need to do this as all power-ups had already been executed. The method adopted in the Miami ROSs was to assume memory expansion present and tip some code out at >A000 (better for FW compatibility at >A050 so the system workfile name is not trashed). I assume in the absence of published descriptions or source code that the OPA 8,14 ROS does much the same. The assumption is that no other power-up uses the same area. TI never allowed for card capture except by p-code, and so made no provisions for it in general.

Not all the design problems are simply and universally solvable unless the system is restricted to having only one auto-boot card active at a time. I always set up my systems so that the auto-boot HRD (192Kb devices) is at CRU >1600 or >1700, safely above the AVPC or Nachatronics at >1400, and have the main system RAMdisk as DSK5 at CRU >1000 for speed as this is the first DSR accessed by normal (and Funnelweb) DSRLinks.

That's just about all for this letter from Australia and for 1992 as well. By the time you read this it will be 1993, so a happy New Year to all.

Tony McGovern
Funnelweb Farm
Dec / 20 / 92

DONE

A NEW TROJAN HORSE?

Bill Gaskill
January 1993

Just about everyone who uses a computer has heard about the viruses which plague the PC Community and to a lesser extent the Apple Macintosh world. The media's treatment of the Michaelangelo virus last March is now notorious for the marvelous job it did scaring computer users into spending millions for anti virus software to combat it. But Michaelangelo is only one of 20 or more known viruses floating around the PC World.

We are much more fortunate in the TI Community. Some year's back I remember hearing about a game out of Germany named FREDDIE that turned out to be a Trojan Horse because it was really a destructive piece of handiwork by some cracker

NEXT PAGE

that wiped out disks. I also remember hearing about SUPERTRACK back in February 1987. It was another Trojan Horse program that masquaraded as a track copier, but in fact turned out to be a disk destroyer. Perhaps there have been others, but I haven't heard about them. Maybe I'd be better off today if I had?

This past weekend (the first week of January) I ran into what I have dubbed the "I Gotcha" virus on my TI-99. My problems with this virus started quite innocently, and unexplainably. I was saving an Extended Basic program that should have been small enough to fit within the PROGRAM IMAGE limitations imposed by VDP Ram, but it showed up on disk as an Int/Var 254 file the way programs do that are so large they run in two parts, one part in VDP Ram and the other in the High Memory portion of memory expansion. As a general rule I've found that this occurs with programs that are larger than 12,000 bytes (around 47 sectors, that are saved on a disk based system. My program was only 41 sectors but still showed as an Int/Var 254 file?

Okay, I thought, maybe something's wrong with my Extended Basic module, or maybe it has something to do with the fact that I saved the program to my hard disk? Let's see if the program will run anyway, I mused? It would not! Syntax Errors existed throughout the XB code that were so numerous I knew they could not all be of my making. So I now knew I had a real problem. I just didn't know what the problem was yet.

Later on in the day I tried to create a new subdirectory on my hard disk but was not able to. Instead, the MDM5 disk manager just told me there was some unidentified error. Cataloging the hard disk I noticed to my horror that 155,000 sectors on my hard disk were suddenly showing up on the "USED" side of the directory display instead of being on the "FREE" side where they belonged, and the "FREE" side told me I had only 672 sectors of usable hard disk space left. I had just reformatted the hard drive 5 days before and hadn't gotten around to fully restoring all the programs and data from floppy, so I knew I could not possibly have consumed all but 672 sectors of a 40mb hard disk! Now I was sure that the hard disk was the problem (wrong!) so I shut it down and went about finishing my business using the Horizon Ram Disk and two floppy disks in my system.

Surprise, Surprise! This is when the fun really began. I loaded DM1000 and attempted to copy the programs and files that I was working on from DSK1 to DSK2, with a DS/SD initialization of the disk in DSK2 to take place before the copy. Everything went just fine until the 720 sector initialization process ended. As soon as it did the screen suddenly changed from showing 720 sectors free on the floppy in DSK2, which was named @FILEV1_1, to 360 sectors used, zero sectors free, and it now sported a disk name changed to !I GOTCHA!. I'd finally been hit square in the face with a baseball bat, but that's what it took to get my attention and make me realize it wasn't my hard disk at fault, it was a %(+[computer virus. I had NEVER even suspected a virus in the TI Community, but the "!I GOTCHA!" message was pretty convincing evidence that scum exist in the world who own TI-99 Home Computers too. The PC and Mac Communities don't have exclusive ownership on low-lifes.

I went back and tried to re-initialize the floppy in DSK2 by it did the same thing. Then, I put in another floppy and tried to delete a file from it, again using DM1000. Guess what? The new disk was immediately wiped out and the 360 sectors used, zero free, and "!I GOTCHA!" disk name appeared. So it appears that !I GOTCHA! is activated by ANY WRITE TO DISK process, whether it is SAVING, COPYING or even DELETING. At this point I have no idea if writes to disk of data are included in that assessment. Probably the most fortunate part of this whole affair is that a virus cannot infect the TI's operating system since it is in ROM rather than on disk like PC's. Thanks TI!

So...you're probably wondering if I'm going to tell you where the virus came from? Well, I only wish I could. During the two days before my encounter with the virus I happily and ignorantly downloaded a couple of Multiplan templates from a major on-line information service, I received a shareware program purchased directly from the author, I purchased a disk with Computer War, Submarine Commander and River Rescue on it and I purchased 6 or 7 disks full of assembly language games from the software library of one of several User Groups I belong to. I copied virtually all of the programs to my hard disk first thing, as I always do with any software I intend to use and it was on my hard drive that the problem started. The shareware programs and some of the games were archived so I used my Horizon Ram Disk to unarc them, which is the most plausible explanation of how the virus got onto the HRD too. In all, there were probably more than two dozen programs and/or files that I dealt with, which makes it pretty difficult to isolate the culprit.

I don't really suspect the shareware program, because as I said, it was purchased directly from the author and people who create viruses don't like to be identified, so I've decided that it was not the source. I don't know about the Multiplan templates for sure, but they were ones that I had written and uploaded myself back in 1988, so it's a pretty good bet that they weren't the source since no one (except a Sysop) can upload a file with my ID. That leaves the game disks. I don't suspect the Computer War disk because it came from a commercial vendor who would almost certainly have received other complaints about the virus by now, and they've received none.

That leaves the disks received from the software library of a User Group I belong to. I see no benefit to anyone in revealing the name of the group but I have notified their librarian of my experience so they can evaluate the information and give it what weight they decide is

NEXT PAGE

appropriate. Since my articles appear in several User Group newsletters on a regular basis I do want to avoid any speculation, accusation or trepidation that this issue might cause. Therefore, I am stating for the record that the games disks DID NOT come from the LA 99ers library, they DID NOT come from the LIMA 99ers library and they DID NOT come from the Mid-South 99ers library, all of which I belong to.

I have destroyed the disks in question, I've reformatted by hard disk and my Horizon Ram Disk and reinstalled all software from original disks to ensure that the virus is gone. Since we have no anti-virus defenses in the TI Community (that I am aware of) there seems to be no other option. The programs that I remember copying to my hard disk and the ones that I unarced on my Ram Disk are listed below. There were many more unfortunately, including some assembly language music programs, but I don't remember all the names, and as I said, I stupidly destroyed the disks in my anger, so I can't go back and identify the program names.

Although it is probably not a common enough problem to justify the effort, maybe a Barry Boone or a Bruce Harrison type will decide to produce an anti-virus product for the TI. Here's hoping...

BANDIT, BERLIN WALL, BREAKOUT, MIDNIGHT MASON, MUNCHMAN, PADDLE BALL, SPRINGER, TI INVADERS.

DONE

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HOW TO BUILD CABLES

by Tom Morrison
Lima Ohio User Group

Not many computers use cassettes these days, but I still do. Most of the problems I have ran into where cable and/or connector troubles. Building your own cables is not an impossible task. You spend much less and have a better cable by building your own.

On the cassette connector, as you look at the computer, run 1 thru 5 on the top, and 6 thru 9 on the bottom. The list below tells what each pin is used for;

1. CS1 motor + control
2. CS1 motor - control
3. ground
4. not used
5. Record output
6. CS2 motor + control
7. CS2 motor - control
8. Audio input
9. Audio return

I cut three pairs of wire 36 inches long. Three black and three white. The first white and black wire pair were connected to pins 1 and 2 of the 9 pin connector. The RS 274-289 plug was connected to these wires. Don't worry about reversing them. When you try this cable and the motor control does'nt work, you just reverse the wires on the plug.

The next black/white pair were connected from plug pins 8 and 9 to the larger RS 274-287 phone plug. I painted the plastic hood on this white to identify it as the audio. Pin 8 should be soldered to the short terminal on this plug. Pin 9 of the plug should be connected to the longer terminal of this jack.

The remaing wire pair goes on pins 5 and 3 of the plug. 5 goes to the long terminal and 3 to the short terminal. Now you can put the hood on the plug. This last wire pair is the record plug. I marked mine with red paint. After plugging it in and testing, you will want to wrap the wires with tape. I ran the wires through a length of black tube found at the electronics store.

For those who have a monitor that takes a video and audio jack and not the modulator box, it is easy to connect. The TI model number UM1381 just snaps apart. Pop the front off and the wires are labeled as to what they are. The plugs have to match your monitor. I cut the cable and attached the corresponding wires to the plugs. You might wish to purchase a din (round) connector with 5 pins, the shielded cable, and jacks. Looking at the din connector with the notch at the top, the pins are 1 thru 5 counting counter clockwise.

1. 12 volts (not needed)
2. video out
3. shield
4. ground
5. audio out

A parallel printer cable can be constructed some times without even soldering. The connectors are made to snap over and puncture the wire to make the connection. pins 1 thru 9 are connected straight across. These are data lines. You have to know where the handshake line is on your make of

NEXT PAGE

printer. This is pin 10 on the TI connector. The port is a 16 pin pin-head connector, and is organized like this;

15 13 11 9 7 5 3 1
16 14 12 10 8 6 4 2 (front view)

On my printer pin 11 had to be connected to pin 10 on the TI parallel port. Pin 16 on each were ground. Here is a list of what they are;

1. control stobe (clocks it into printer)
2. thru 9. are data lsb to msb
10. and 11. sense input (printer says "got it")
12. 1K resistor to +5volts (??)
13. 10 ohm resistor to +5 volts(??)
14. logic ground
15. spare control strobe
16. logic ground

I have a long cable to my printer now. Wraped in foil it looks strange, but it works. The snap connectors and flat cable were much cheaper than buying a cable . I hav'nt made any joy sticks, but I don't use them very much. It uses the same 276-1538(Radio Shack) connector as the cassette plug. The pins on it are;

1. not used	5. left	9. fire
2. stick #2	6. not used	
3. up	7. stick #1	
4. fire	8. down	

If you know the connections on a different manufacturers stick, you could adapt it to your TI. Many happy connections to you all.

DONE

FOR SALE--THESE ARE GOOD PRICES

PE box with 32K, TI controller, one double sided drive. Only $85 plus shipping. I HAVE SEVERAL such systems.

Working consoles; $15 each.

I also have a large list other hardware and software for the 99/4A which I would like to sell or (preferably) trade for stuff I don't have. I'll send you a list in response to your post card or evening phone call.

Joseph Cohen
144 Mimosa Dr.
Charlottesville VA 22903
804-293-8973

DONE

A NOTE ABOUT THE SMALL SIZE OF BB&P'S PRINTING

This note is in response to an article in another user group newsletter probably commenting on the small size of BB&P's hard copy print. We normally copy two newsletter pages onto one side of each paper page to reduce our printing costs, literally reducing these costs in half. We also save postage. If you have trouble reading this small print there are two solutions:

--Paid members of the Lima User Group can request a full size (one newsletter page on each paper page). We have a limited "full size" print run for those requesting the full size version. Out of area members please send your request to the newsletter address. There is no additional cost for this service.

--Exchange user groups and individuals who are not paid Lima UG members can obtain at no charge DV80 disk files of all articles published in BB&P. Either send a disk and paid return mailer to the newsletter address or download the files from the C.O.N.N.I. newsletter clearinghouse BBS or from GENIE.

WHY?

by Walter Ward Jr.
Bluegrass 99ers and
Lima Ohio User Group

Why hasn't a man like Jim Peterson won the Birdwell Memorial Award? The man is an acknowledged genius in the field of TI Extended Basic programming. He has contributed so much and so unselfishly to the TI communityh that if he doesn't win the award this year there is no justice

Why doesn't some assembly genius write a program to partition a DSDD disk drive into three SSSD disks thus giving us the soft flippy? One and a half flippies to be exact. Now that everybody has quit making flippies this could be very practical.

Why, now that CorComp is making cards for clones and Myarc is defunct and of course TI has quit manufacturing disk controller cards, doesn't someone write a universal DSR that would work with all three cards?

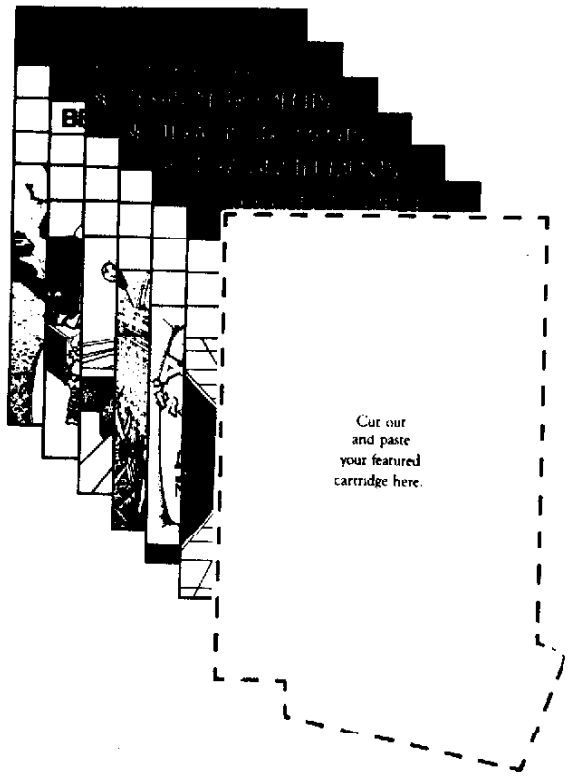
Why doesn't someone write an article on how to rewrite those Gram Kracker format cartridge dump disk files so that they could become XB autoboot autorun programs?

Why do track copier authors disappear after writing their first big program? Has in this or any other group been able to contact Bryan D. Hall, Phillippe Pair or Christopher Winter, authors of Track Hack, Trap Track, and Copy-C respectively. For that matter dies anyone have a current address for Charles Earl, author of Telco and Mathbug?

DONE

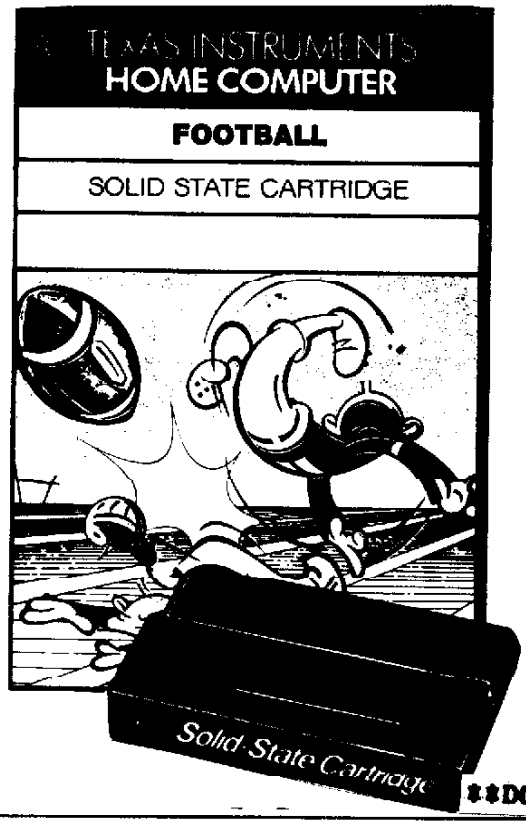
TI'S ADMAKER KIT:
BLACK AND WHITE REPRODUCTION LINE ART

Did you ever wonder where TexComp got those neat black and white module pictures, TI logos, etc. they use in their catalog and Micropendium ads? They are using the official TI Admaker kit. This comes as 28 8.5 x 11 inch glossy pages mostly full of black and white artwork suitable for paste ups of 99/4A advertisments. The title page of this booklet says, "This admaker kit will help you prepare advertising for Texas Instruments Home computer software." Included are details of TI's cooperative advertising program requirements, and the rules for using the TI name and logo in advertising created and paid for by 99/4A dealers. Some samples of the line art appear on this page. Bill Gaskill donated an original of this document to the Lima Ohio hardcopy library. We can xerox this entire booklet for $.85 plus postage for members who are interested.



TEXAS INSTRUMENTS

Tunnels of Doom
Enter a world of fantasy, fight countless monsters, gather treasure and save the king. Tunnels of Doom includes two games: Quest for the King and Pennies and Prizes. Available in Cassette and Disk. (Program Recorder or Disk Memory System required.)



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