

# Classic 99

People

Helping

People

The official Newsletter of the Hoosier Users Group

May - June 1998

The HUGger's Newsletter

Volume 17 Number 3

#### Officers Corner by Dan Eicher

It is spring! Traditionally, spring has been a time of growth and renewal; let's hope this is true for interest in our 99's! With any luck, this issue will reach you only one month after the last issue. I am hoping to get us on track again, i.e... The May-June issue arriving the first week of May. Let's see if we are up to the challenge. This issue should be going out right before the Lima fair.

The May meeting will be held in...Lima! On page 4, you will find information regarding the Lima fair.

Lima; this has always been one of the most laid back fairs. It's easy to get to, quiet woodland setting, is very relaxing. Once again, the Huggers will be represented. I will have our newsletters to pass out, a box full of power cables to sell at a buck a piece, and our manuals. I will be demoing the Tomy Tutor, Control Data Console. Plato courseware and Plato interpreter cartridge. Hope you can make it there.

Speaking of the Tomy, it now has its own web page: www.crosslink.ptloma.edu/~spectre/tomy. This web page was set up and is maintained by Cameron Kaiser. I have included the first page of this web site in this issue. On page 2, you will find a short article by me on the Control Data Connection.

Tim Tesch missed Fest West in Lubbock, but has been busy nonetheless. He has done most of the repairs and upgrades of Myarc equipment that have come out of Cecure in the last six months. Tim has also been busy working on MDOS and Port.

The June meeting will be held at Bill Lucid's place, 6005 Elain Street, Speedway, IN, at the regular time. For directions, please call one of the officers. Bill will be doing a demo of either V9T9 or Packet Radio.

One new project that is underway is by Jeff Brown of Term-80 fame. He has started up his TI and is at it again. His goals this time around are much more lofty than just a terminal emulator. He wants to create a whole new operating system and advanced compiler to go with. Jeff has programmed a good deal on the Amiga and has learned a lot from the programming tools and techniques that have been developed for that platform.

Using this knowledge, he is building many advanced concepts into the TI compiler and operating environment. Jeff is giving periodic updates on his progress. I have included his March 23 update in this issue. I think you will be impressed with what he is putting together! I know I am.

Mike Wright of Cadd Electronics has done some fabulous work again. I sent him a copy of a program called Doom of Modular, that to the best of my knowledge, hadn't been broken. After working on it for three weeks, he finally broke this program so that it will run on PC99. The copy protection scheme used to protect this program is very complex, one of the most complex I have ever heard about! At the July meeting, I will share how he did it. Mike was kind enough to send me a ten page document of how he broke the copy protection scheme using the tools available to PC99 users. It also details all the protection tricks used to guard this program against illegal distribution. I will wait until July to upload this document to the BBS since it is currently pending publication in Micropendium.

MORE NEW STUFF: \*\*UNRELEASED ATARISOFT GAMES FOR THE TI LIBERATED\*\*

Atari was split into two companies after Warner sold it off. One half became the Atari that makes coin operated amusement games. The other half became the Atari that produced home video games and computers. This division was purchased by Jack Tramel (formerly of Commodore). The last two devices produced by this Atari were the Trantor (a very nice computer - marketed mainly in Europe) and the Jaguar, a home video console that hooked up to a TV set - continued on next page

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aimed at competing with Nintendo and Sega. About a year ago, Jack's Atari was sold to hard drive manufacturer JTS, who quickly put the remaining Atari people to work selling disk drives. One may ask why a drive manufacturer purchased Atari anyway? They apparently asked themselves the same question and sold all the rights to Hasbro (www.hasbro.com), who plans on releasing a host of Atari games on the PC/Windows platform. If you have a web browser you can find further information at www.cgnc.com/news/031298a.htm. One must wonder what Nolan Bushnel (Atari's original founder in the '70's) thinks of all of this!

As with any major corporation (and lest we forget at one time, Atari WAS a MAJOR corporation) Atari had warehouses full of documents, unreleased prototypes design and manufacturing equipment, etc. As part of the fall out, Atari's remains were auctioned off. Kyle of Competition Computers purchased a number of items at the auction. What did he get? Modules that had been made by AtariSoft for the TI, but never RELEASED! He has sent a couple of them to Charles Good to demo at the Lima Fair!

#### ALSO IN THIS ISSUE:

You will find a partial transcript of a conference that happened on Delphi several years ago with Karl Guttag of TI. From time to time, some of you may have seen the "Review Module Library" (RML) screen pop up when you inserted a module, you will find a complete discussion of this interesting feature included in this issue. Last but not least, we also have an excellent article and Extended Basic source code on how to create additional color on the TI - over and above the 15 basic!

#### The Control Data Connection

Dy Dan Eicher

Control Data Corporation (CDC) produced many packages for the educational market under the Plato Courseware name. Not only did they develop educational software but many other packages for educational institutions to help them create their own comseware and packages to keep track of students grades - all very advanced for its day. At some point in CDC's story, they were purchased by TI. Naturally enough, TI and CDC repackaged the TI Console (it has a CDC label on top and bottom and when it powers up, it displays the CDC logo on the title screen) for the educational market. This repackaged TI console also has it's own special setup guide. When you combine this special console with the Plato Interpreter Cartridge and Plato courseware, you have a very attractive looking package indeed. I will be demoing this combination at the Lima Fair. O'yes, they also repackaged the TI PBOX with the CDC logo.

Now, you may be thinking "I have been in the TI community a good while and never seen one of these consoles - why not?" Well, as luck would have it, by the time everything got ramped up to sale these packages in large quantity, the home computer wars had started. The TI console was being sold at 49.00 dollars at K-Mart and CDC was trying to sell them at 400 dollars a pop.

Most teachers, being smart individuals, figured out these were just repackaged TI's, so, they went out and bought what they needed at K-Mart also!

It would appear CDC is still around (www.cdc.com), but their business focus has changed. I wrote an email to them asking for any information regarding Plato. I got an email back from Yvonne Maas who wrote that CDC had sold the "Plato" business years ago. The current company is now called University On-Line, phone 612.882.8859. I have not had a chance to call or write them, but it would be interesting to find out some information on them!

#### **MFM Resources**

By Dan Eicher

It is getting harder and harder to find MFM drives for the TI. Recently, I needed to purchase a couple and here is some information I gathered for this purpose. A very good place to get MFM drives for the TI is Alltronics. They have a very good selection, very good prices and their service is tops! 408.943.9773. For those with a web browser, their web page lists their current selections (www.alltronics.com\mfm.htm).

Now, if you need cables to hook up MFM drives to the Myarc HFDC, yoi will have to build your own. A good place to get the parts is JDR Microdevices (www.jdr.com). Unfortunately, they have started charging a five dollar service charge for orders under 50 dollars, if you don't order through their web page. Here is the current list of part numbers you will need to hook up a MFM hard drive:

IDE20 (1 per Drive) - .55 Each IDS20 (1 per Drive) - .55 Each IDE34 (1 per Drive + 1) - .79 Each

You can also purchase a crimper (HT-214) - 14.99. They also have ribbon cable, sold by the foot.

Other good resources of used/older parts include:
Mouser (www.mouser.com) - 800.346.6873 - they also have
their catalog on CD-ROM; and BG Micro
(www.bgmicro.com) - 800.276.2206 - Lots of inexpensive
surplus equipment.

And don't forget your local electronic salvage dealers. They sometimes have hard-to-find chips at decent prices!

## V9T9 xmdm2ti/a FILE / DISK TRANSFER

By Roger Price, H.U.G.

This only works if you have a fully configured working V9T9 program.

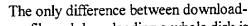
First you need to prepare a blank disk or have plenty of space on an existing disk. I then used hyperterminal with Windows 95 and Telco with the TI using xmodem to download program files. I did not want intermediate files on my harddrive so I saved them to 1.44 floppy. The one bugaboo about xmdm2ti was that Ed gave no example of the actual command line. So here is an example. Pacman is the name of the program and the target disk is Disk-12.

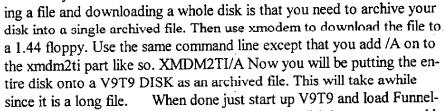
Go to the V9t9\V6.0 directory with cd\v9t9\v6.0 now type the following:

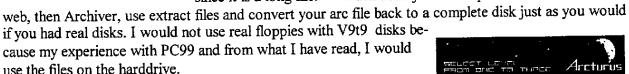
>UTILS\XMDM2TI.EXE A:\PACMAN C:\V9T9\V6.0\DISK-12

This should put the file into the disk as a subdirectory file.

Start v9t9 change your disk path with shift+ctrl+f9 to the new path, press Enter, then Escape key. If your program is an xbasic then use the usual commands and your program should be there.







Incidently most of the Atari games do not run on V9t9 but they do on PC99. I have a 5 sector Basic catalog program that I made which I put on each disk. So if you do not get results all you need to do is load catalog and whichever disk is in effect will load it and you can search out what disk and files are on each drive.



If you don't have anything I will send you a copy of the Addatex version of V9t9 with 5 disks files and some programs, Funnelweb, catalog. For the disk send \$1.50 for shipping and handling U.S. For foreign estimate postage. For the disk send to:

Roger Price, 1015 N. River Drive, Marion, In 46952-2607

Using V9T9 and the program Pagepro, Gifmania or Ti Artist, you can put a Ti GRAPHIC on the screen, then press CTRL+PRTSCN (printscreen key). This will put the graphic into the clipboard. Start PAINT or other graphics program, paste your graphic, then save the picture to a bitmap file. Load in a

PHOTOWORKS, PHOTOSHOP or other program that will handle graphics. Clip the file to save only the good part then paste the graphic into a page.

Used for article: V9T9, Funnclwriter, Gifmania, Pagepro, Photoworks, Paint, Microsoft Publisher.

Pictures: Samurai, Fish, City from Gifmania.



#### Color Blending

By Janice E. Brooks, Dallas Users Group

Have you ever felt limited by the mere fifteen colors in the standard TI-99/4A? Ever wished you could coax the system into producing more? Well, you can, and it's actually pretty easy. I'm not talking about fancy bit-mapped graphics or Assembly programming -- Just a simple BASIC or XBasic routine.

How does it work? Just by redefining a given character in a checkerboard pattern, assigning different foreground and background colors, and printing a block of the character with the HCHAR function. The idea is old hat to skilled programmers. I saw the underlying routine in one of Steve Davis' Program for the TI home Computer, which used blended colors to suggest various landscapes, such as tan (gray and light yellow) for a desert.

I've seen the effect in some Fairware programs as well. But the concept was so striking to me that I figured there had to be other comparative novices out there who would be interested to see how color blending works. So I wrote the XBASIC program to display all the possible combinations. The bottom of the screen shows the various blended colors while the top keeps track of the colors used to make the blends.

Over a hundred NEW colors are made possible by blending the originals ones. Unfortunately you can only use a few colors at a time in a BASIC or XBASIC graphic program, since you have to use CALL COLOR on whole character sets, but at least some new options are available. They look a bit grainy, but some are quite nice. I'm especially partial to the new shades of purple.

In any case, enjoy the program. Be careful with the spacing of the colons when keying in the program, so BASIC knows when you mean "multiple statement line" and "skip a print line."

10 !Public Domain. By Janice Brooks, 115 Foster Avenue, Sharon Hill, PA 19079

100 CALL CLEAR::DIM A\$(16)::FOR R=2 TO 16::READ A\$(R)::NEXT R

110 PRINT TAB(12); "Blend"::PRINT "This program cycles through the 120 colors made possible by blending the 15 standard TI colors"

120 PRINT: "Press any key to continue."

130 CALL KEY(0,K,S)::IF S=0 THEN 130

140 CALL CLEAR::CALL SCREEN(16)::CALL CHAR(128,"AA55AA55AA55AA55")

150 FOR I=2 TO 16::FOR J=2 TO 16::IF I>J THEN 200 160 DISPLAY AT(1,1):A\$(I);"(";STR\$(I);")"::DISPLAY AT(2,3):"and"::DISPLAY AT(3,1):A\$(J);" (";STR\$(J);")"

170 DISPLAY AT(5,3):"<Press any key>"

180 CALL COLOR(13,I,J)::CALL HCHAR(12,1,128,384)

190 CALL KEY(O,K,S)::IF S=0 THEN 190

200 NEXT J

210 NEXT I::CALL CLEAR::INPUT "Review again(Y or N)? ":G\$::IF G\$="y" OR G\$="Y" THEN 140 ELSE STOP 220 DATA Black,Medium Green,Light Green,Dark Blue,Light Blue,Dark Red,Cyan

230 DATA Medium Red, Light Red, Dark Yellow, Light Yellow, Dark Green, Magenta, Gray, White

#### <u>Disclaimer</u>

This newsletter is brought to you through the efforts of officers and members of the Hoosier Users Group. Every member is encouraged to submit articles.

If you have an article you would like to share; or a request for an article, mail it to:
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Opinions expressed are those of the author and not necessarily those of the Hoosier Users Group.

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#### Karl Guttag Conference

The following is an excerpt from a conference held on Delphi with Karl Guttag - who designed the 9918A, 99105, TI TMS34010 and most recently one of TI's DSP's.

From Sprites to the TMS34010 Graphics System Processor

A lot of people, when they think of TI and graphics, think of the 9918 and sprites (the term "sprites", a Greek fairy, was coined by one of the 9918's definers). Some people have asked about why the 34010 did not have sprites, and my answer is that the 34010 was designed to handle many more "sprites" and with more capability than the 9918 ever could, but it does them differently. It so happens I was one of the designers of the 9918 and I was in charge of the definition of the 34010 -- and yes there is a connection. Below is the story.

Perhaps the most outstanding feature of the TMS9918 and 9928 (the 9928 was digitally identical to the 9918 but it had different analog outputs) VDP's developed in 1977-78 were the sprites. The sprite concept meant that one could move an object around the screen by merely changing the X and Y coordinate. The '18 was designed in the days when the microprocessor's processing power was very limited and thus "bit-blting", the bit aligned was not practical.

While sprites were great for games (the 9928/18 were used in Colecovision, TI's home computer, the Japanese home computer standard MS/X, plus a vast number of consumer video products), they have their limitations. For every sprite to be displayed on a given line there had to be a set of hardware which included shift registers, color latches, and counters. The 9918/28 had sprite pre-processing logic (that I designed) that sorted through a list of 32 sprites to show those sprites that would appear on a give line AND kept track of priority (who was on top of who), but due to hardware limitations only 4 sets of display hardware existed. Also, limits on the size of the sprites were limited to 16 pixels wide (this could be magnified by 2). To have more colors per sprite would mean more shift registers and to have wider sprites would mean longer (bigger) shift registers.

On top of the hardware requirements of sprites, there were bandwidth issues as well. Sorting through the list of sprites consumed a number of the few available memory cycles. If the sprites were bigger or had more colors there would not have been enough bandwidth to support over the 9918's 8-bit bus. Did you know why the 9918 never supported full color bitmapping? - it was because there was not enough memory bandwidth available.

After the 9918, I went off to architect the TMS9995 and TMS99000 16-bit microprocessors for the next 3 years -- they were well designed chips but were late and not well marketed (oh well). In late 1981 I was considering what I

wanted to do next, when an application group from TI in England claimed they could do "bit-mapped sprites" (generate sprite like objects on a bitmapped display) IN SOFTWARE with a 9995. The 9995 has an 8-bit external bus and 16-bit internal bus with a 16-bit-wide 256-byte on-chip 333ns RAM which could be used to store tight loops (which made it a lot faster than an 8088 at some things).

Even so, I thought they must be wrong (heck, I knew what they both could do), but I pulled out a calculator, pencil, and paper to see. The calculations showed that the 9995 could handle a few "bitmapped sprites". The reason was that while the 9918 would have to construct each sprite, line by line, which wasted lots of time and memory bandwidth, the 9995 could be much more organized in moving "bitmapped sprites." -- for example, the 9918 had to constantly re-fetch information on each scan line to define a sprite, where the 9995 would work on each sprite from start to finish into the bitmapped frame buffer.

The nasty problem with the 9995 handling sprites was the bit alignment and field extracting and inserting problems in the moves, which severely restricted the number an size of sprites it could handle. The 9995 could not do everything that the 9918 could, BUT it could do some things that we would not have tried on the 9918 such as multicolored sprites and big sprites.

I then started to consider what could happen if one designed a processor that could handle the bit-aligned manipulations. I worked out that you could generate such sprite effects that it would be prohibitive to build a "hardware sprite chip" that could even come close. You could have more sprites on a line and each of them could be multi-color and not have the severe size limits that hardware imposed.

It turns out that some of the operations "bit-mapped sprites" required already had a name. Xerox had coined the term BitBlts (bit block transfers). In the same time frame as I was calculating "bitmapped sprites and what they could do, Xerox's Smalltalk graphics kernel article appeared in Byte (August 1981 pp. 168-194). I was hooked, and the rest as they say is history.

We had very lofty goals for the new chip concept. We wanted to go beyond what was already being done.

Particularly there was NOTHING we could find written about COLOR — so we started creating. The first problem to solve was "TRANSPARENCY", this was the concept that while you might define a object by a rectangle, there could be "holes" in the rectangle defined by place-saver "transparent" pixels (we had "transparency" on the 9918 and we were not going to give it up — but note a number of the "new" graphics chips DON'T support transparency). We invented continued on next page

(or re-invented as some of these concepts may have first been thought of elsewhere but had not been published that we could find) arithmetic operators, plane masking, binary color expansion, and transparency. In the end, we called the new set of color options (including the boolean operations) PixBlts, since we thought of them as pixel rather than simply bit operations.

When out people were writing the MS-Windows driver, they needed a "hardware cursor (essentially a "hardware sprite"). They used a technique I developed back when looking at bitmapped sprites. What you do is just before the cursor is to be displayed you save the image under where the cursor is to be drawn, then inhibit drawing until the lines having the cursor have been displayed, and then un-draw the cursor by replacing the saved image. This technique may sound on the surface wasteful (and it is, there are more efficient methods), but on a 640 by 480 display with a 16 by 16 cursor it only takes up about 3% of the total bandwidth (ie., you could put up many cursors this way). And the net effect is just what you would get with a "hardware cursor" only you can support more of them with less restrictions than any chip I know of that has "hardware cursors" -- ah, but that is that the 34010 was about in the first place.

#### RML Discussion

Karl Guttag

[Editors Note: Here is a copy of an article that came across the TI-List server. It explains a little used capability built into our trusty 99's.]

[Bryan Roppolo wrote:] Hey,

About 1 month ago, I purchased a TI-99/4A from a local thrift store for about \$5. The system was a beige version but there were no scratches or marks on the case! When I took it home to test it out, I found that the video chip was not working properly. I put in the Munchmobile cartridge and to my surprise, on the second screen (Where it displays "Press 1 for TI BASIC") there was an option number 3 for Review Module Library. I pushed 3 on the keyboard and it just beeped like it normally should do and took me back to the option screen.

Now get this, I just plugged in the Terminal Emulator II module into my TI-99/4A which I have had since 1981 and when I came to the option screen, there was an option number 4 for Review Module Library!

(There were already 3 options because option 1 is for TI BASIC, option 2 is for Terminal Emulator II, and option 3 is for Terminal Emulator Default Settings). The weird thing about this is that it occurred on 2 different machines! Anyone out there have an explanation for this?

Please respond to the Listsery.

[Michael Becker of the SNUG's Users group replied:] The operating system TI99/4a supports up to 16 different GPL-banks, marked by different READ/Write addresses. The base bank is 9800/9C00, the last is 983C/9C3C. At power-up the TI looks for a difference between the area 9800 and 9804, the first two banks. If there are different codes, then the message "review..." appears and you can increase the READ/WRITE-address by 4 by pressing the key-number show for "review..." Because of different entry-points for some modules (e.g. multi-lingual-modules) this can be the number from 3 to 9! The hardware, needed for this multi-chart feature was never released by TI, but we have used it in our HSGPL-card to allow the user to have quasi 16modules in parallel. Winfried Winkler wrote a different new GROM-0 which allow you to switch backwards (the TI-Grom only increase!) So you can have up to 16 banks with up to 8 GROMS with up to 8K each at the same time! Note: subprograms where found on all banks by a scan. In your case, the message appears, because of a contact problem with your module or the GROM-Port. Then the CPU reads different codes on both addresses and expect two modules, which are not there.

[Mike Wright adds:]

The first thing in understanding REVIEW MODULE LIBRARY is to carefully read Michael Becker's post. The RML feature is part of the power-up routine which checks to see if there is a module at >9800, and then at >9804 (and so on for 16 modules). If the contents of the bytes returned at >9804 are different from those at >9800, then the code assumes there is a second module (and so on). A badly aligned module port, or a worn cartridge may fake the routine into believing there is another cart, hence the RML message.

The RML code was developed for the "Super GROM library" device, which TI never built. Gary Bowser built a prototype and showed it at a Chicago Fair some years back, but it was horribly unstable (which is probably why TI gave up on it). It was essentially a Navarone Widget with slots for 16 carts. It was held together with tape and rubber bands, and if anyone breathed hard close by it would crash. In our PC99 product, we allow the user to configure up to 16 modules. The PC99 code fakes out the console code into believing there are x modules out there, and hence the REVIEW MODULE LIBRARY message is displayed. One of the beauties of emulation is that you don't have hardware problems (unless it's the PC itself).

The really important architectural piece of RML is that the routine in the Basic interpreter that finds CALLs will search \_all\_ modules found. Therefore, if you have say TEII and PRK loaded, then from TI Basic you can do OPEN #1:"SPEECH", OUTPUT (which is handled by TEII) and CALL D{parameter list} (which is handled by PRK, and is akin to XB's DISPLAY AT).

continued on next page

I think this would have been a great way of adding features to XB. You would buy the XB-Trig cart (for example), plug it in an empty slot, and could then have access to say hyperbolic trig functions (e.g. CALL SINH, CALL COSECH), etc.

The only penalty with RML is that on a standard TI (and in PC99) only one of the carts can have ROM. (The German HSGPL card overcomes this limitation).

This feature would also have effectively added a large amount of memory to the TI. Each cart can have up to 5 GROMs (the first three are in the console). Each GROM can hold 6K (8K if a GRAM). So for each GROM you get  $5 \times 6 = 30$ K, and for 16 GROMs you get  $16 \times 30 = 480$ K. Not bad for a device designed in 1979. [Editor: I have to agree!]

#### The 1998 MUG Conference

Friday May 15 4PM through Saturday May 16 7PM Last updated April 10, 1998 with more groups.

This all TI99/4A and Geneve computer show is sponsored by the Lima Ohio User Group and will be held in Reed Hall of the Lima Campus of Ohio State University. The event is totally free. There is no admission charge and no charge to those wishing exhibit area tables.

#### Seminar Speakers

To date, the following have signed up to give seminars: Lew King "Accessing the internet with a 99/4A using Term 80"

Ted Zychowicz "How to transfer files from the TI to a PC without a modem"

Bob Carmany "Upgrading the TI"
Bruce Harrison "Midi Master upgrade"
Dolores P. Werths: Midi music concert.
Jim Krych The Video Turtle.
Dan Eicher - Control Data and Tomy Tutor.

The following have, to date, requested display tables
Cleveland area user groups. 2 tables
Dave Connery, hardware. 3 tables
Milwaukee area TI User group, 1 table
Harrison software 1 table
S & T Software (Tim Tesch). 1 table
The Fort's User Group, Fort Wayne Indiana
Turtle Enterprises/Video Turtle (Jim Krych)
HUGGERS User Group, Indianapolis Indiana (2 tables)

#### **HOTELS**

There are no dormitories on campus. Call any of the following places and make your best deal. In general, hotel prices in Lima are inexpensive.

The following hotels are conveniently located about 2

miles from campus at the intersection of I75 and route 309:

Motel 6. Phone 419-228-0456. This has been the most popular hotel at previous MUG conferences. Holiday Inn of Lima. Phone 419-222-0004. Very nice with an indoor pool, but kinda expensive. East Gate Motel. Phone 419-229-8085. Economy Inn. Phone 419-222-1080. Super 8 Motel. Phone 419-227-2221.

This place is located on I75 two exits north of the 309 exit about 6 miles from campus and has the biggest indoor swimming pool in the area. A nice family place:

Ramada Inn and Conference Center, Phone 419-221-0114

The following places are about 3 miles from campus at the intersection of I75 and route 81.

Days Inn. Phone 419-227-6515

Econo Lodge. Phone 419-222-0596

HERE ARE SOME ADDITIONAL HOTELS, not as close to campus as those listed above:

Fairfield Inn. Phone 419-224-8496 At route 309 and Cable Road, west edge of Lima near the Lima mall Imperial Inn. Phone 419-228-4231. 131 E. North St. in downtown. Lima.

Tourest Motel. Phone 419-991-3911. Near I75 and route 81.

Comfort Inn. Phone 419-228-4251, Intersection of I75 and route 81.

Colonial Motel. Phone 419-223-2015. On route 309, west edge of Lima.

Villager Lodge. Phone 419-228-2525. 418 W. Market in downtown Lima,

Holiday Inn Wapakoneta. Phone 419-738-8181. I75 and Bellefontaine in Wapakoneta, the next town south of Lima Knight's Inn. Phone 419-331-9215. On route 309, 2 miles west of Lima.

Country Inn Motel. Phone 419-229-9311. On route 309 west edge of Lima.

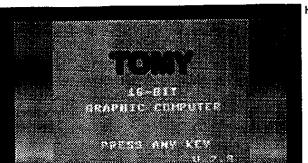
Catalina Motel. Phone 419-738-2649. 15115 route 67, Wapakoneta OH.

Days Inn of Wapakoneta. Phone 419-738-2184. I75 and Wapak-Fisher Rd. Wapakoneta OH Super 8 Motel. Phone 419-738-8810. 1011 Lunar Dr.

Wapaloneta OH.

This page will be updated in the coming weeks as more details become available. For further information, to schedule a seminar, to request exhibit room tables, phone Charles Good at 419-667-3131 or send email to cgood@im3.com.

[Editor Note: This information was picked up from Charlie's web page at www.geocities.com/heartland/hills/2761/mug1998.htm]



A mockup of the Tutor banner screen.

http://www.crosslink.ptloma.edu/~spectre/tomy/

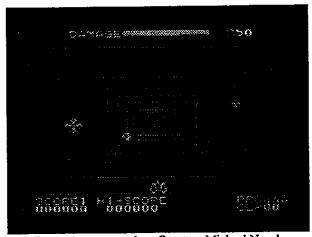
### The Little Orphan: The Tomy Tutor

Last modified April 3rd.

Here lies probably the only memorial to this most obscure of computers. Part kid's toy, part graphics superstar, part unknown TI-99 clone, the Tomy was just another computer to fall under the wheels of the Commodore 64. And I should know, because my parents got me a Commodore 64 after we got the Tutor. Released in 1983, the Tutor was just unlucky enough to hit in the middle of the VIC-20 and 64 craze, despite its superior graphics and its fast, efficient speed. Based around the 16-bit Texas Instruments 9995 processor, its 100% assembly language operating system blew away the 99/4's in both speed and efficiency (but alas is largely incompatible, even though there is some evidence of identical BASIC tokens and common OS code), and it implemented the fine graphics of the TMS 9918ANL chip, its earlier relative, the TMS 9918A, powering the Coleco Adam, the Sord and, of course, the 99/4 series. It even had a built-in paint program, since the graphics were so good.

I have no information on when the Tutor was discontinued or how many units were ultimately sold. Inquiries to the Tomy Corporation have been to date ignored. Presumably no one there knows that the computer even exists nowadays.

If you have one of these little gems, and it still works/you still use it, or even if you used to have one, please get in contact with me! Send mail to <a href="mailto:ckaiser@oa.ptloma.edu">ckaiser@oa.ptloma.edu</a>. Let's trade information!



Hyperspace screen shot. Courtesy Michael Novak.

#### News

Updates will appear here first.

3 April 1998: Russ Perry, Jr. gave me some new carts for the list. I'll be adding data as it arrives.

2 April 1998: Added some scans and the first of the photographs. More soon.

#### TicK OS & K-Assembler Update

By Jeff Brown <kludge@magma.ca>

I'm more than a little late with this... but then, there are reasons for everything.

I'll start by saying I spent most of my March break working on K-Assembler consequently, I didn't sleep much and looked like a wreck last Monday at school! This weekend was much the same though I couldn't afford to spend much time given the homework situations.

Okay...Update for March 28, 1998. KAssembler:

- 1) new EVAL routine works 100%... parsing and evaluation is fast, efficient, etc... it could still be improved slightly.
- 2) A few "errors" were changed to "warnings"... many new warnings added due to the addition of the opcode & directive formatting code. I noticed some error conditions weren't really bad enough to merit dropping the source line prematurely. 'EVAL' returns errors only for syntax problems, undefined symbols, etc..., and returns warnings for things like arithmetic overflows and type mismatches. The Formatting subroutines further verify validity of arguments, and produce proper opcodes or sends appropriate location-counter notification and other info to the retargetable object code generator.
- 3) Object code generator is just a stub right now... but actually implementing it wouldn't require more than a couple hundred lines. (big deal! I have other problems to fix first)
  4) MAJOR CHANGE: K-Assembler split up into 2 parts
- K-Project will act like the EA menu... linking k-Assembler, k-Linker, k-EA3Load (for compatibility), k-Editor (future), k-Debugger (soon)

AND... \*drumroll\* provide full project compilation automization!!

- K-Project works as a common segment (though access is provided through a static link... since I'm just using cheap EA#5 files for k-Assembler, etc.) and contains all common code and data. Among them:
- File I/O system
- GUI handler (GQUERY, GDISP)
- Keyboard support
- VDP support
- Memory (both static and peephole)allocation
- K-Project uses (you guessed it) Project files just like a C compiler on one of the major platforms. It is responsible for parsing arguments in the file and passing them on to the assembler, linker, loader, etc...
- The overhead incurred by having a menu system like k-Project is \*minimal\*. It \*only\* contains the high-level links; the interfaces for the "Tools" is part of the particular program... the link between k-Project and the Tools is quite simplistic even! Overall, there will be quite a savings in disk space (since the original package would have ended up

repeating the same code in each program), and will hopefully speed development.

- Imagine not having to sit around while the TI assembles, links, or SAVES a program! It'll do it all in one shot! I'm trying to work out a method of tagging source files to provided a "compile only newer" kind of option. I need the equivalent of an "archive" (A bit) flag like the Amiga has... I could just read the FDR and compare filesize and EOF offset, but that won't be able to track a single-byte difference or other. Bahh... the only other thing I can think of is using a reserved bit somewhere in the FDR. Ideas?? Is it worth it? 5) Revisions for v4.10 of Hunk are nearly complete. Actually I wrote 90% of the new document within 2 hours and haven't touched it since. I need only add some of the extended tags for LREF/LDEF and various things...

Sooo... maybe I should have thought of k-Project beforehand... it would have saved me all the changes. Welll... this is a good exercise at least. I'll say this: TICK OS has taught me more about modular programming than any other project! (surprised? It's an operating system folks!)

#### Tenative HOOSIER USERS GROUP Meeting Schedule

Jan.18, 1998	July 9, 1998
Feb.15, 1998	Aug. 16, 1998
Mar.15, 1998	Sep. 20, 1998
Apr. 19, 1998	Oct. 18, 1998
May 17, 1998	Nov. 15, 1998
June 21, 1998	Dec. 20, 1998

#### Mark your calendars!!

Hoosier User Group meeting place TO BE ANNOUNCED prior to meeting. Meetings start at 2:00pm.

HUG supports the following computers:

TI 99/4A and Myarc 9640 Geneve



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