## BITS, BYTES&PIKELS

LIMA 99/4A USERS GROUP



### DECEMBER 1991

Volume 7, #10

THE NOVEMBER 1991 CHICAGO TI FAIRE
reported by Charles Good and Dave Szippl
Lima Ohio User Group

CHARLIE'S PART:

The Chicago user group did their usual good job of sponsoring a well organized classy event. This year the Faire was at a new location near Chicago's airport at the Elk Grove Village Holliday Inn. Apparently the organizers were pleased with this new venu, because it was announced that next year's Faire will be at the same location in early November 1992. Certainly the price was right for those staying at the notel. Hooms were \$50 per night for up to 4 people per room. EACH of these 4 people were treated to a complementary hot buffet breakfast and two free drinks in the bar for each night of accompdation.

The entire schedule at Chicago included a Friday evening social mixer (\$5) which included hot food and a cash bar, the actual Faire itself Saturday from 9AM-5PM (\$4), a Saturday evening social mixer (free, no food, a cash bar), and a Saturday banquet and awards ceremony (\$20 for a nice catered meal). The main event, of course, was the Faire on Saturday. The exhibit area was about the same size as the exhibit area at the Lima MUG conferences. There were seminars in a separate room scheduled continuously from YAM through SPM. Exhibitors were almost exclusively commercial dealers. There was a separate area set up for user group tables, but this area was largely vacant. Few user groups had tables. In contrast, at the Lima MUG conferences most of the tables are taken by user groups and by individuals with stuff to sell. Only a minority of the tables at Lima are occupied by "connerical" dealers.

We met lots of TI personalities and between the two of us managed to attend all the seminars. One not-so-well-known TI personality I met for the first time was Jeannie Brown of Springfield Illinois. Jeannie is the author of the TI ARTIST v2 video tape tuturial that is in the Lima U6 video library. This has been the MOST REQUESTED tape by our members in recent months. I hope Jeannie follows up with a video demo of TI ARTIST PLUS.

The Chicago group does not usually release attendance figures, but estimates are possible. I was one of the first in line and my door prize ticket had 296 as its last three digits. The highest door prize ticket number announced ended in 479. Based on these numbers and on the crowds I saw, I estimate total attendance at 300

#### HARDWARE

The big no-show was "THE ACCELERATOR" which has been advertised in Bud Mills' MICROPENDIUM ads the last couple of months for \$250. Bud says "any day now", and I think he means it. As I understand the situation, production of "THE ACCELERATOR" jointly involves D.P.A. and Bud Mills Services, and Bud is waiting on D.P.A. for something. Bud had Geneve MEMEX memory cards, PERAMs, and Horizon Ramdisks built up and available for immediate purchase at his table. I bought a PERAM+ and will report on it in a future article.

Q.P.A. had what seems to me to be the most interesting aew hardware device up and running at their table. Their POP-CART is about the size of an ordinary TI solid state cartridge and plugs into the 99/4A's grow (cartridge) port. This device is more stable than, and replaces the multimodule 617MO box, which O.P.A. will not be marketing. POP-CARTs contain RAM and GRAM in 256K sized chunks of EPROM and are custom programmed by O.P.A. with your choice of existing TI cartridge software. You can fit 5-7 TI modules of your choice such as Extended Basic, TE2, the EA module, Plato, and Multiplan onto a single 256K POP-CART. O.P.A. can also put specific disk based programs on a POP-CART. Archiver, Rapid Copy, DSKU are among the programs available. Just plug this custom "super module" into any 99/4A console and have access via the console's REVIEW MODULE LIBRARY feature to all of the modules. If Extended Basic and the TE2 are on the same POP-CART you can have unlimited TE2 speech from within XB.

The cost is US\$95 plus \$4.50 shipping for the 256K model, which includes custom programming of your POP-CART by O.P.A. Additioal multiples of 256K are available for more money, up to about 2Meg of TI modules on the same POP-CART. For an extra US\$25 O.P.A. will put its SOB operating system on your POP-CART so that you can get a power up menu display of all the modules on your cartridge and don't have to cycle through them one at a time using REVIEW MODULE LIBRARY.

POP-CARTS are hard burned to the specifications of the purchaser. There are no batteries or disks and the device is MOT user programmable. To get one, write O.P.A. and request a list of what TI modules are available. Pick the ones you want on your POP-CART, sign a statement that you already own the requested modules, and send your money and the statement back to O.P.A. They will custom burn your POP-CART and mail it to you.

Another significant piece of hardware shown was Mike Maksimik's Midi Interface (aka MIDI MASTER 99). This is a special cable that connects between the RS232 serial port and an eklectronic keyboard's Midi I/O jacks, in conjuntion with some software. The software allows you to create music files as DV00 files using TI Writer and then play this music off of

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a disk via the keyboard. Unlike ordinary audio music tapes records or CDs, the Midi software allows you to alter the tempo and/or octive of the on disk music "on the fly" to create interesting effects. Software version 3.0 of the Midi Interface (available "any day now") will allow one to play the keyboard and have the resulting music stored on disk.

Both at the Friday evening social and the next day at the main event, Mike entertained us with music. Some was his own, and some was music developed by Bruce Harrison for the Midi Interface. Mike had a nice keyboard and a set of good speakers and amplifier. The sound was FANTASTIC! The classical and other music played was a real pleasure to hear. I have seen several brands of keyboards with Midi I/O capability at my local Kmart for under \$150. Please note: not all keyboards have Midi I/O jacks.

Rave had their expansion chassis and IBM style TI keyboards available. The Geneve chassis is \$309 and the TI version costs \$379. These look great and do away with much of the cable clutter common to many TI systems, but all they have inside is a power supply. All the important guts (keyboard, computer motherboard, drives, and cards) are extra. Working 99/4A consoles were available at the Chciago show from two different dealers for \$10. Used PE boxs with the flex cable, a TI controller, 32K and a SSSD drive were going for \$100 at one dealer's table. At these prices I can see no reason other than cosmetic and neatness to buy a Rave Chassis. TI PE boxes were built like M1 tanks. They are tough! Even used TI PE boxes should give years of reliable service.

#### SOFTWARE

Barry Boone demonstrated SOUND F/X, software than can play canned digitized sound recordings via the 99/4A's sound chip through the monitor's speaker. This is all done with software, which Barry sells for \$15. All available RAM (supercart, 80 column device video RAM, RAMBO, Geneve) can be used to store between 10 seconds (on a basic TI + 32K system) and 10 minutes of digitized sound for playback. you can digitize," including IBM sound blaster sound files are supported and there are said to be lots of these files available for downloading from bulletin boards. Digitized sound I heard included short music segments and familiar voices from TV and movies. According to Barry, "TI sound resolution is about 1/4 that of an audio CD. Geneve sound resolution is about 1/2 that of an audio CD." Barry had sound files available for \$1.25/disk (both SSSD and DSDD) the same price). No, you can't create digitized sound files with this software. All you can do is play sound files created by

Barry also had 10 "new" games for the Geneve, ported over from the TOMY TUTOR computer, the "other" circa 1983 computer that used the 9900 CPU.

Ken Gilliland (NOTUNG SOFTMARE) demonstrated TI CASINO, anhanced since its release last winter at Fest Nest. TI CASINO is a real "experience", much more than just individual

betting games. You feel that you are actually visiting a casino, complete with 8 casino games, a stage show for entertainment, a restaurant, and various personalities you interract with. If you make a profit, the software prints a personalized check for you. I purchased this (\$15) and will review it in a future article.

It was a real pleasure to meet Don Shorock face to face. Don demonstrated his Japanese and Hebrew language tutor software. The neat thing about the Hebrew program is that it prints Hebrew characters on the screen right to left, just as Hebrew is supposed to be written. Don has written the best foreign language tutorials there are for the 99/4A. These are fareware and are available from the Lima U6's library and the libraries of other user group libraries.

Mike Sealy demonstrated MS EXPRESS game software for the adventure module. Their ADVENTURE HINTS series also load into the adventure module. Ask a hint program something like how to ENTER CASTLE, and the program responds with OVER DRAMBRIDGE. The hints also print on screen lists of all nouns, verbs, and treasures.

Representing ASGARD SOFTMARE, David Bishop demonstrated his not quite ready for release MUSIC MAKER CONVERTER. This software can convert 59 sector MUSIC MAKER files to EA source code, C99 code, mergable extended basic, Fortran, or a runnable TI BASIC file. I wonder of David knows about MUSIC SDA, the never released official module that does some of these same conversions.

#### BARRY TRAVER

Barry deserves a category of his own. He gave the only seminar I heard which did not attempt to sell the crowd specific software or hardware, although Barry did mention his disk magazine.

Barry discussed how home ownership of MS-DOS and TI computers could complement each other, and gave a great big plug to official TI software modules. He told us his son had been home schooled until now and had just entered a regular high School as a freshman. Barry said that his son learned all his basic math skills at home, "but I didn't teach him these math skills, the TI did using educational software modules. And guess what math he is now taking as a high school freshman? Calculus!" Barry gives significant credit for the academic success of his son to TI's high quality education software that makes full use of the TI's color, sound, graphics, and speech.

At the Saturday evening banquet, Barry was presented with the first JOHN BIRDWELL AWARD for his service to the TI community since the early days of our computer. John's widow and teenage daughter were there to present the award. Barry was shocked! He was speechless (for a few moments). I have known Barry as a friend for several years and I have never before seen him speechless.

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### DAVE'S PART

We arrived in Chicago at 7:30 pm friday night, Nov.1,1991, and after getting settled into our room, it was off to the social mixer. There I met up with some friends that I had made on earlier trips to Chicago and at the Lima User Group Conference. We talked about how our user groups are doing, what new and exciting things we have added to our computers since last time we talked, and what we hoped would be announced at the fair Saturday. Finally at 12:00 am we grudgengly went to our rooms so we could get soom sleep before the big event begining at 9:00 am.

I had the good fortune of sharing a room with Dr. Charles Good from Lima, Harold Hoyt from St. Louis, and Barry Traver of Philadelphia. Even though we all needed sleep, the excitment of being there kept us talking about the TI 99/4A until 1:00 am. The next morning we all seemed to wake at the same time, somewhere around 6:30 am. After quickly getting dressed, we nurried down to the restaurant so we could wait for it to open at 7:00 am. Judging by the number of other TI ers waiting in line, no one could sleep knowing that "The Fair" was going to start in less than 2 hours.

Finally 9:00 am came and the doors were opened. I was late getting to the first demo because I was about 40th in line. Finally at 9:15 I was setting down at the demo by John McDevitt on new hardware from RAVE 99. The demo was on a Peripheral Expansion Box for the II 99/4A and the Geneve. The expansion box has a larger power supply than the original by II and a quiet fan that keeps the expansion cards cool. Other products RAVE 99 offers are IBM style keyboards, a new memory/Ram card, and a card that allows you to put speech inside the PE box.

At 9:30 am, Bruce Harrison, of Harrison Software, previewed CODEBREAKERS. CODEBREAKERS is a cryptogram game that offers a real challange to even the sharpest of minds. I was looking for his new program used to transfer text files between TI and IBM machines. This software is written in Assembly on the TI side and Basic for the IBM compatable side. I bought my copy and now all I need is a RS232 cable to link my computers and I will be able to transfer text file back and forth between machines. I also purchased the game SCUBBUSTERS. I told my wife it was the patriatic thing to do...

After the Harrison demn, Charlie said he was going to see the next two demos, which allowed me time to browse the main hall. The main hall contained what appeared to be everything that is possibly available fot the TI 99/4A and the Geneve computers. The sights and sounds made me feel like a kid in a camedy store. With the \$50.00 my wife gave me for my birthday burning a hole in my pocket, I set out to find some new software ( since I don't have any room for any more hardware in my computer room).

Locating Bruce Harrison's table, I bought SCUSBUSTERS and SMART CONNECT. SHART CONNECT is a program to transfer files between II and IBM. Bruce had a II connected to a clone and was showing how it worked. It works so simply that even I can do it. All I need now is a RS232 cable to connect between the two computers.

Mext stop was the 9640 News table to pick up IDENTIFILE by Mike Dodd. This little gem will give you a directory of a disk and tell you what type of files are on it. This is very useful when trying to figure out if a file is a Myart picture, RLE picture, or a GIF picture, all are D/F 128 files. While looking through the Chicago User Group library, I found Art breen's Multiplan v 4.0. This is supposed to utilize the 80 column card and be faster than the original.

At the Disk 'n Dat table, I picked up a nice muse holder that sticks on the side of my PE box. Del and Walter of Indianapolis had DSDD full height disk drives (Qume) for \$20.00 each. I bought one for one of our members that just had one of his go out on him. Ramcharged Computer of Cleveland Ohio, had their Pro Stick joystick available with a 5 year warranty for sale at \$14.95 each, so I had to buy two (for the kids of course). Competition Computer from Wilmaukee had a very large selection of new and used hardware and software. I was able to find a PID cable for a second printer that I will use for printing labels.

OK, so you are saying to yourself, "How can he get all of this for \$50.00". Well I did spend a bit more than \$50.00, but my wife thinks I am a bargan hunter and I don't want to let her down. Besides, she doesn't often read the newsletters so this will be our little secret.

The 11:45 demo was by Berry Miller of 9640 News and was mainly for the Geneve users. From what I heard from Geneve users, 9640 News and Berry Miller are finally bringing out the software the Geneve users have been waiting for. Mindows and Gen Bench Shell appear to utilize the never before used power of the Geneve. I also heard rumors of a new final version of MDOS coming soon.

Mike Maksimik talked about his MIDIMASTER 99 at the 12:30 pm time slot. Mike had his MIDI system set up in the main hall and played MIDI music all day. Bruce Harrison has been writing music for the MIDIMASTER and it must be heard to really appriciate it. This demo must be seen and heard. Mike said he will have it at the Lima User Group Conference in May.

The next demo I went to was at 3:00 pm. Don Shorock showed off his educational software. Don's AIR TAXI is a learning gome in geography. You must fly your plane to a selected city by the most direct route before your plane runs out of gas. Another one of Don's offerings are his series on language tutorials. You can make up your own vocabulary tables in all the most common of languages.

I missed some of the seminars but Charlie Good was able to see some of them and will report on his observations also. By the time 5:00 pm rolled around, I was worn out. The Chicago User Group did another outstanding job with this years TI faire. I am making plans for next year already. It will be the 10 th annual event and from what I have heard, It will be very special.

At 7:00 pm, the dinner was held. After a very good meal, the 1st annual John Birdwell Memorial Award was presented to Barry Traver by John' widow and his daughter. Barry was visibly moved by his selection as this year's recipient for the Outstanding effort for continuing support for the II 99/4A community. I know Barry personally and he is truely a shinning light. I would also like to mention that there are many others out there that are a major source of fuel that keep the fire burning in TI land. Many thanks to you.

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# BLD TRICKS FOR NEW (and not so new) USERS by Joseph Cohen Lima Ohio User Group

Thou manu of us tend to ignore most of the cartridge software for our computer, with the exception of II Extended Basic and, possibly, Multiplan, Logo II, Editor/Assembler, and IE-2 (for speech), many of the cartridfges are very enjoyable. In order to give you an excuse for searching your vlosets and basements looking for those hidden modules, I'd like to point out that many of them have undocumented features ranging from useful to interesting to amusing. Here are a few examples.

many are probably familiar with "The Secret of Personal Record Keeping: Implementing DISPLAY AT and ACCEPT AT without Extended BASIC", published way back in 99'er magazine and reprinted in The Best of 99er, p. 76. Briefly, TI BASIC with the PRK module contains the commands CALL D() and CALL A() (similar to DISPLAY AT and ACCEPT AT). Presumably this also works with the Statistics module, but I do not have this one and could not verify it. I have been told that this is a result of the hybrid nature of certain modules, containing both GPL and BASIC coding. Perhaps someone knows or could discover additional undocumented features of this cartridge (I have extra PRK modules if anybody would like to experiment with it), and possible other cartridges which evall console BASIC routines (E.5. Tax/Investment Record keeping).

Next, the TI Disk Manager cartridge offers a proprietary protection feature that does not allow the Disk Manager to copy a protected diskette. To use it, press the FCTN-X key ten times while on any menu screen. You will hear a beep (if your monitor has sound!) and  $\times$  will appear at the center top of the screen. Any diskettes initialized at their point will

be proprietary protected. Each time you address them using the Disk Manager cartridge (e.g., to catalog such a diskette), a low-tone beep will sound (not present for unprotected diskettes), informing you that the diskette is protected. The protection information is stored in sector 0 on the diskette. This type of protection is ineffective against the sector disk copiers and has been discussed in the past. I wonder of anybody knows more about it. The DM-1000 offers protection and un-protection of diskettes; is it the same kind as the TI Disk Manager cartridge?

Now to a few game cartridges. Moonmine, Alpiner, Munchman, Munchmobile, and Hooper have a test mode, where you can select the starting level. So if you wanted to see what it is like to play at those levels you could never reach, here is a good reason to plug those cartirdges into your 77/4A! The test mode is obrained by pressing SHIFI/8 3 8 at the game title screen (SHIFT/8 only, for Hopper). and on Durgertime, pressing SHIFT/8 gives a message: "code modifications by John M. Phillips". Have you always played Parsec as a one player game? Here is something different, for a two player team. If the fire buttons on both joysticks are pressed simultaneously. Spaceship Parsec will not overheat. Horizontal lines will appear on the screen, but they do not disturb the game and would allow, in fact, one to see the Bymites when they turn invisible.

This is certainly not an exhaustive list. If anybody knows about other "tricks", would they please let me know? CEd note: Hr. Cohen can be reached at the newsletter address, P.D. Box 647, Venedocia OH 458941. I am sure the Adventure and Tunnels of Doom modules contain undocumented features. Please take a few moments to let others know, and emjey your cartridges!

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### UPBATE- 1992 LINA MUS CONFERENCE Saturday May 15, 1992

At the recent Chicago and Milwaukee shows the following individuals and organizations told us they plan to attend the 1992 Lima Multi User Group Conference.

Braatz Computer Services, Appleton WI. This will be the first time this "general" dealer of TI software and hardware has attended a MUG Conference.

L.L. Conner Enterpirse, Indianapolis IN. This is a well known "general" TI dealer.

Ramcharge Computers, Brookpark OH. Ron Markus is the Cleveland area's "general" II dealer. Ron has an exclusive marketing agreement to sell the ProStick, probably the best joystick ever made for the II.

Competition Computer, Milwaukee WI. Ted sold LOTS of official TI hardware and software at the 1991 MUG conference.

Dud Mills Services, Toledo OH. Bud's reputation is among the best for manufacturers of NEW hardware products for the TI.

Parry Traver. He says, "I certainly wouldn't want to miss the Lima show!"

Marrison Software. Bruce Harrison sells a variety of MEN software products and now produces music for use with the MIDI Interface.

Eunice Spooner. Eunice asked me very recently, "Is the Lima Motel 6 close enough to the campus to allow me to get there in my wheel chair?" I said I didn't think so, but Eunice is coming anyway. Somehow I just can't immagine Eunice motoring down route 309 in her battery wheel chair, but then it is really hard to immagine many of the things remarkable lady does.

\*\*DONE\*\*

## THE OCTOBER 29/91 UPDATE OF FUNNELNEB V4.40

We have received from Tony McGovern an update of Funnelweb v4.40 that fixes some problems adds a few improvements to the earlier release of v4.40. DSKU comments can now be copied with no problems. The 80 column DSKU comment user interface has been redone and is friendlier. Error handling has been improved with more explicit error messages. Instead of just saying DISK/DEVICE ERROR, you now get in addition something like READ FAIL IN 1 or MRITE FAIL IN 2 to indicate the drive and specific activity that produced the error. The 80/40 column editor now windows properly in 40 column mode. Disk directories correctly print from the editor SD and from Bisk Review.

Anyone who wants this update can have it by sending the memivalent of 4 SSSD disks to the Line User Group, P.O. Box 647, Venedocia OH 45894.

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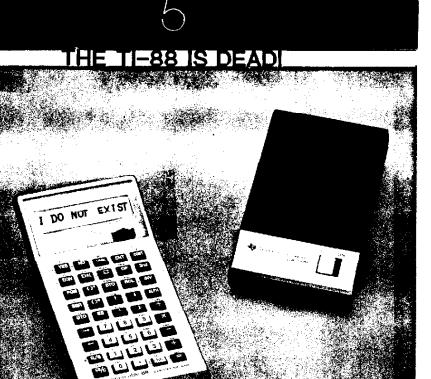
THE TIGO, AMOTHER "NEVER RELEASED" HARDWARE PRODUCT
by Charles Good, based on material
provided by member Palmer O. Hanson Jr.
Lima Ohio User Group

About 7 months before the first public showing of the CC40 and 99/2 computers, TI announced with great fanfare a top of the line programmable calculator named the TISS. According to the background information that accompanied TI's May 26, 1982 first press release about this new product, the TIBB would form "the basis of a new portable computer system." This calculator was displayed at the Summer 1982 Consumer Electronics Show, and photographs of the T188 exhibit at this show appear on page 13, volume 1, no 6 of 99er MAGAZINE. The TIBB is also illustrated and described in a short article in the November 1982 issue of 99er MASAZINE. Then II withdrew the product and apparently replaced it with the CC40 which debuted at the January 1983 CES. Reasons for the early demise of the TIBB and TI's change of emphasis toward products like the CC40 are discussed in some detail by Herb Shanzer, then manager of TI's Calculator & Compact Computers Division, in an interview published in the April 1983 issue of 99er HOME COMPUTER MAGAZINE (p45-48). Apparently TI thought that a small computer with built in BASIC would have more consumer appeal than an upgraded programmable calculator. Only a few working prototypes of the TIBB ever reached private hands.

Our member Palmer Hanson Jr., who is also current editor of TI PPC NOTES, the newsletter of the TI PERSONAL PROGRAMMABLE CALCULATOR CLUB, has provided the Lima US library with extensive documentation on the TI88. This material includes the full text of the May 26, 1982 press release, a four page descriptive illustrated bruchure published by TI, a very incomplete "1st revision" of the TI88 USERS REFERENCE GUIDE, and several issues TI PPC NOTES that contain articles and programs relating to the TI88. Maurice E. T. Swinnen, editor of the TI PPC NOTES in 1982, had an actual TI88 to play with. We can loan or copy this material for anyone who is interested.

One of the documents Palmer provided was the 1982/83 catalog of PERSONAL COMPUTER PRODUCTS INC., of Dallas Towas. (This company is no longer in business.) The catalog includes products by Hewlett-Packard, Sharp, and TI, and has a two pages devoted to the TIBB. Sometime in late 1982 a disgusted member of the TI PPC, upon learning of the non-release of the TIBB, doctored these pages a bit to show his dismay. This amusingly altered catalog page is reprinted here. The page's text gives a good general description of the capabilities of the TIBB. It is interesting to note that this calculator is designed to accept up to TMO solid state modules SIMULTAMEDUSLY, providing it with extra RAM and/or preprogrammed software.

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TI-86 The Texas Instruments TI-86 represents a major advance in programmable calculators. Ease of use was obviously a primary design consideration in its development. Existing software can be run and programs can be developed with the calculator prompting the user through each step. This breakthrough allows grompts to be answered with the yes and no keys, or with the appropriate data entry. Programming is also made easier because formulas can be entered into the calculator exactly as they are written, even those formulas utilizing scientific and engineering notation. The TI-86 satisfies the advanced programming requirements of the professional user, yet is designed to be friendly enough for non-technical personnel to use the preprogrammed software.

This calculator has 230 built-in programming and slide rule functions that reduce the time spent

on repetitious calculations. Programming features allow the user to trace program development on the calculator display. These include 10 user otenable keys, 126 program labels, 10 subroutine levels, 24 user flags, 4 system flags and a program counter. The time and date alarm enables the user to schedule programs. The Evaluate key allows the user to enter formulas and evaluate them repeatedly with veriable values. The T-06 has a full range of statistical features including two variable statistics. The 16 character, dol matrix, alphanumeric display draws from a set of 128 characters. The characters include upper and lower case letters with special symbols for advanced programming.

The internal memory capacity is 960 program steps or 120 data memories. Two ports in the

back of the TI-88 will accept nonvolatile memory modules or Solid State Software\* modules. Each memory module holds up to 1184 program steps or 148 data memories. This gives the TI-80 a maximum configuration of 3328 steps or 416 data memories. Each module holds up to 10 programs; and the calculator display shows the number of programs stored and the number of steps still available. The memory modules can be protected, edited, erased and duplicated. They retain the programs for 5 to 8 years, even when removed from the calculator. The importance of the memory modules now is that customized program libraries can be produced, copied and distributed to other users. All modules are compatible with other TI-86's.

Software modules contain up to 15,000 preprogrammed steps with multilingual prompts and an instruction manual to guide the user through the program. A master library of 12 programs is included with the calculator. Additional libraries are available for statistics, electrical engineering, imance and mathematics. There is a library being developed that will aid users in converting existing TI-58C/59 software to the TI-88.

The calculator comes with an AC adapter/charger.

The rechargeable battery supplies up to 150 hours of continuous use per charge.

As powerful as the TI-88 is by itself, some users.

As powerful as the TI-88 is by itself, some users will require the addition of peripherals. Up to 6 peripherals can be connected simultaneously. The PC-800 thermal printer gives the user the ability to trace program development and prints 15 characters per line at 3 lines per seconds. The orinter will also list contents of program memory, special operating codes and flag settings. The CA-800 cassette interface is used for low cost, reliable.

storage and retrieval of programs that are repeated often. This interface can be used with audio, micro or digital cassette recorders. The user is prompted through the steps for reading and recuruing programs.

The entire system is versatile enough for sophisticated programmers and friendly enough to actually be used by beginners with little or no prior computer experience.

TI-88: \$260.00 PC-800 Printer: \$150.00 CA-800 Cassette Interface: \$50.00

Availability expected late 4th quarter.



## POCEMENTATION AVAILABLE TO LIMA US NEMBERS from Charles Good

Many used TI goodies are being baught and sold, often without documentation. For the curious, and for those who have purchased hardware and classic software that lacks documentation, I have the following TI99/4(A) and CC40 books and magazines as well as printed documentation for the following hardware and software which I am glad to make available for examination and/or loan to Lima Ohio User Group magazines.

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acchers.
                                CC40 RELATED DOCUMENTATION:
                         David Thomas
                              TI-99/4(A) HARDWARE DOCUMENTATION.
     --HORIZON RANDISK REFERENCE MANUAL and CONSTRUCTION GUISE. 1784. This is for the original pre- Bud Mills product with Sk chips.
--HENORY EXPANSION MODEL PMP2200. The side car 32K ---DISK MEMORY DRIVE MODEL PMP1850. The stand alone
   THE THE STORM A. BASIC FOR SETENCE SUIDE. "Final Draft" dated 1783.

--TI 79/2 SETTINS STARTED (aka "Book 1") dated 1783.

--TI 79/2 SOOK 2. BASIC FOR BESINNERS. 1783.

--TI 79/2 BOOK 3. ADVANCED BASIC PROSRAMMINS. 1783.

--TI 79/8 PROGRAMMER'S BUIDE. AUGUST/Sept. 1783.

--TI 79/8 PROGRAMMER'S BUIDE. AUGUST/Sept. 1783.

--TI 79/8 PROGRAMMER'S BUIDE. AUGUST/Sept. 1783.

--TI 79/7 COMPUTER MARDWARE THEORY OF OPERATION. BY MEMORY TY'S Carporate Engineering Center, Delias. The 79/7 was never built.

--MEXIBUS INTERPACE USER BUIDE. 1783.

--PERIPHERAL EXPANSION EVERY MODEL PHP1200 USER Guide.

--DISK MEMORY BRIVE MODEL PHP 1250 USER Guide.

--PISK MEMORY SYSTEM MODEL PHP1220 USER Guide.

--DISK MEMORY SYSTEM MODEL PHP1240 disk controller user guide.
    guide. -- MEMORY EXPANSION CARD MODEL PHP1260 user guide.
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-MILLIKEN MATH SEGUENCES LAWS OF ARITHMETIC module
-READING FUN module
-MILLIKEN MATH SEGUENCES HEASUREMENT FORMULAS module
-MILLIKEN MATH SEGUENCES HEASUREMENT FORMULAS module
-DIVISION 1 module
-DIVISION 1 module
-DIVISION 1 module
-MILD CRALLENSERS module
-MILD CRALLENSERS module
-MILTICATION 1 module
-ALFINER madule
-ALFINER madule
-ALFINER madule
-PARREC madule
               -FOOTBALL module
-CHAMPIONSHIP BASESALL module & overlay
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--METEON HULTIPLICATION module

--PACEMAKER module

--BEMOLITION DIVISION module

--MILLIKEN MATH SEQUENCES DECOMALS addule

--DID DUS ater! module
                                     TI-79/4(A) DISK AND TAPE SOFTWARE DOCUMENTATION
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--TI 99/4A SOFTWARE TEST SYSTEM, the instructions fer
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--BESINNER'S BASIC TUTOR disk PHD 5067
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--BRIDSE SIDDING I tape PHT 6026
--AC CIRCUIT ANALYSIS LIBRARY tape PHT 6044
--SPEAK & MATH disk PHD 5031
--BLDIES BUT SODDIES SAMES I tape PHT 6015
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--THE COUNT tape PHT 6030
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--RISSIGN IMPOSSIBLE tape PHT 6047
--VOOD CASTLE tape PHT 6049
--THE HULK (Scott Adams)
--BUCKAROO BANIAI (Scott Adams)
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## WHY DSEN REFUSES TO PROPERLY BOOT FUNMELNESS

by Charles Good Lima Ohio User Group

DSKU v4.2 which was distributed by the Lima User Group as part of its Funnelweb v4.40 and earlier Funnelweb v4.31 distribuiton. There is an item on the main DSKU menu that says "Load FW". It usually doesn't work. The reason is that DSKU searches the drive you specify for a file named UTIL1, which is what the main Funnelweb file used to be called. The main Funnelweb file is now called FW.

It is easy to modify DSKU to boot file FW every time you ask DSKU to "Load FW". Here's how. Use Funnelweb's DISK REVIEW or other sector editor to search the third DSKU file (named either DW or DSKW) for the ASCII text "UTIL1". You will find "DSK1.UTIL1" Change the UTIL1 to "FW" and put blank spaces over the IL1. Then change the screen display to Hex (CTRL/H if you are using Funnelweb's DISK REVIEW) and move the cursor backwards (to the left) to the first appearance of

"OA". This is at byte >BD in my file DW. Change the GA to 07 and write these changes back to disk (CTRL/W and then CTRL/A if you are using Funnelweb's DISK REVIEW). change shortens the length of text the computer expects to find, since DSK1.FW is shorter than DSK1.UTIL1. DSKU will now properly boot Funnelweb when you select "Load FW" from DSKU's main menu.

\*\*DONE\*\*

### T.I. "BOOKS IN PRINT"

Suprisingly enough, the 1990/91 "BOOKS IN PRINT" lists the following TI99/4A and CC40 publications still in print. You should be able to purchase these directly from the publisher, or have a good bookstore special order them for you. Consult this reference at your public library for the correct address of the publishers.

--Held, Gilbert. TI99 QUICK REFERENCE GUIDE. 1984. pap. \$29.50 (ISBN 0-88249-6) Wiley.

--Brewer, Bill & Willis, Jerry. HOW TO USE THE T199/4A. 124p. 1983 pap. \$9.95 (ISBN 0-88056-135-1) Weber Systems.

--Buxton, Marilyn & Buxton, Tammy. T199/4A VOL 3 (THIAKING-LEARNING-CREATING: TLC FOR BROWING MINDS SET). (gr 5-12) 1983. pap text ed \$11.95 (ISBN 0-88193-053-9). Create Learn.

--Loreto, Remo A. TI99/4A IN BITS & BYTES. Wartman. Robert, ed. (Illus. Orig.) 1983. pap. \$14.99 (ISBN 0-914209-01-9). R. A. Loreta

--McKechnie, Robert M. A GUIDE TO HELP YOU GET THE MOST OUT OF YOUR T199/4A. 23p. 1987 pap. text ed. \$7.95 (ISBN 0-939577-06-2). McWare Products.

-- Minety Miner Home Computer Magazine Editors. THE BEST OF MENETY-NINER VOL 1. (Illus.) 360p. (Orig.) 1984 pap. \$19.95 (ISBN 0-933094-11-6). Emerald Pub.

--Peckham, Herbert D. HANDS ON BASIC FOR THE T199/4A. 352p. 1984 pap. text ed. write for info 915BN 0-07-049155-0). McGraw.

--Rugg, Tom & Feklman, Phil. THIRTY TWO BASIC PROGRAMS FOR THE TI99/4A. (illus). 288p. 1983 pap. \$19.95 (ISBN 0-88056-136-X); incl. disk \$19.95 9ISBN 0-88056-203-X) Weber Systems.

--Turner, Len. ONE HUNDERED ONE PROGRAMMING TIPS & TRICKS FOR THE TEXAS INSTRUMENTS T199/4A HOME COMPUTER. 128p. 1983 \$8.95 (ISBN 0-86668-025-X) ARCsoft.

-- TEXAS INSTRUMENTS COMPUTER PROGRAM WRITING WORKBOOK. 96p. 1983 \$4.95 (ISBN 0-86668-812-9) ARCsoft.

--THIRTY SIX TEXAS INSTRUMENTS T199/4A PROGRAMS FOR HOME SCHOOL & OFFICE. 96p. 1983 \$9.95 (ISBN 0-86668-024-1). ARCsoft.

-- Wang, Shih-Ho. FIFTY COMPLETE PROGRAMS FOR TEXAS INSTRUMENTS TI99/4A COMPUTER (Illus) 112p. 1983 pap. \$6.95 (ISBN 0-914729-00-4) Blue Mtn. Com.

--Thomas, D. LEARN BASIC: A GUIDE TO PROGRAMMING THE TEXAS INSTRUMENTS PROFESSIONAL COMPACT COMPUTER 40 (IIIus.) 256p. 1983 pap. text ed. \$9.95 (ISBN 0-07-064257~5) Byte Bks. McBraw. \*\*DONE\*\*