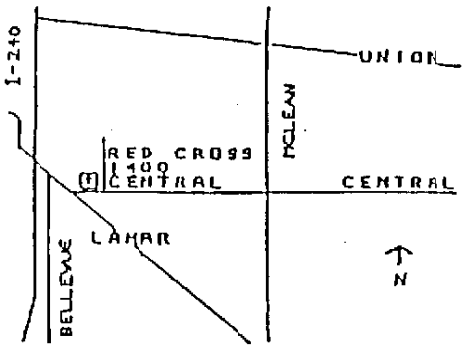
NOTICES

MEETING
7:00 P.M.
Thursday, AUGUST 20th
Red Cross Building
1400 Central Av.

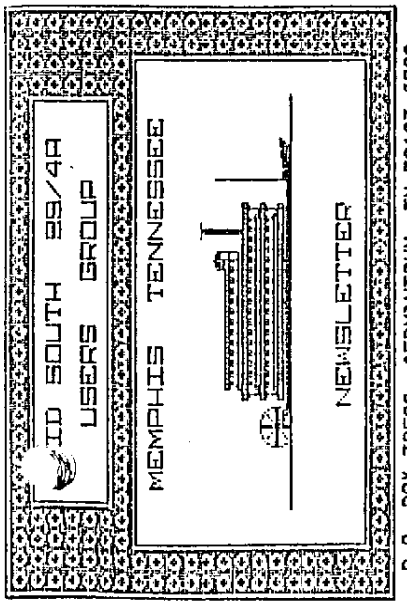
WORKSHOP
9am till Noon
Saturday August 29th
Mac Swopa's place
3880 Warrington Cv
Memphis, Tn 38118



MEMBERSHIP APPLICATION

NAME _____ | | $15.00 FAMILY
ADDRESS _____ | | $10.00 JUNIOR (under 15)
CITY _____ ST ZIP _____ | | $10.00 ASSOCIATE (N/L only)
PHONE( ) - : INTERESTS _____
_____
EQUIPMENT, ETC. _____
_____

Detach and mail with check payable to: Mid-South 99 Users Group, P.O. Box 38522, Germantown, Tn, 38183-0522.



TIDBITS

AUGUST INDEX

Newsletter for the MID-SOUTH 99 USERS GROUP Vol 5, #8 August 1987

T I D B I T S

PRESIDENTS BIT

Summertime - Summer, TI me.
Whew! These high temperatures are enough to make a fella take a air conditioned ski lift up to an Alpiner cartridge! Yes, its almost too hot to get out and go to the next Users Group meeting! BUT GO ANYWAY !

Last month the meeting was somewhat informal with drinks and snacks. We did have a few last minute demos, but in general the meeting was to relax and get to know each other and catch the latest in the TI community. Dick Vandenburg has "volunteered" to head up the program chairmanship, and several people have said they will lead program demos. Thank you all!

You know, the information that you get out of your computer is only as useful as the quality of information that you put into it. And information is only useful if it has been consistantly updated and faithfully maintained. There is a lot of new information on the wire about our computer. New products, new programs, new version updates, and new members with 'old' information thats new to me.

There are some members in our group that have gone to great lengths to establish links to the latest TI information. There are some members that go to great lengths to make the information available to you. There are some members that open their homes so that workshops can be held. Do you think they do all of this because they have to? No its because they want to. There is a feeling of accomplishment when you can share information. Sometimes it takes the right questions (no matter how trivial they may seem) to get to the next plane of answers.

All I'm saying is if you dont get a charge everytime you turn on your TI, then maybe you NiCads* need replacment! (N)ew (I)nformation (C)an (A)id (D)ecisions See you at the next meeting...Mac Swope

SHOPPERS CORNER

Ed Johnson has the following equipment and software for sale. Expansion Box, 32k, TI Disk Controller, TI SS/SD disk drive, Black and Silver console, Extended BASIC, Cassette Recorder, Cassette Cables. He also has all the original program books, joysticks, Disk Manager cartridge, TI Invaders, Home Budget and a few othe pieces of software. He is asking in the $350 price range or best offer and prefers to sell as much of it together as possible. If

interested call Ed at 901-873-3848.

Please note that Larry Hamel has rejoined us as a member and has the following for sale: Mk 10 Anchor modem for $48.00, a new RS232 card for $46.00, call him at 901-873-4448. Welcome back Larry and family...Al

MODEM BIT

Besides TI-NET and Risky Business many other BBS systems exist locally running on other brand computer systems. Because all BBS systems transmit in ASCII any brand computer can access another brand computer system VIA modem. However, some of the special features for a specific computer will not operate for another brand computer but most of the features work ok.

Before calling some of the systems read some of the tips below:

Many systems respond to the following codes for screen control. If one does not work try another.

CTRL S	PAUSE
CTRL Q	RESTART AFTER A PAUSE
CTRL C	ABORT
CTRL K	ABORT

When calling a BBS you need to disable call waiting if you have it. If someone calls you while you are on the system you will be disconnected. To do so dial Star 70 (touch tone) or 1170 (dial) and wait for dial done and dial your number. Call waiting will be disabled for that one call and it will be reset when you dial the next number. Anyone trying to call you while you have call waiting disabled will get a busy signal.

To enter call waiting disable into your auto dialer program enter it like this:

FOR EXAMPLE:

ATDP 1170,3861760	(ROTARY)(PULSE)
ATDT Star70,3361760	(TOUCH TONE)

As you may know every brand computer can access another brand computer system. This is because all BBS systems transmit in ASCII. However, some other brand computer systems may have some special features that we are unable to access such as ANSI graphics or 80 column display so we need to tell that system what we are able to operate with. If asked by a BBS when regestering answer the following answers to the following questions:

ANSI GRAPHICS? NO
Screen Display? 40 (columns)
Line Feeds? YES
Nulls? None

The above answers are the most important that you need to answer if asked by a system you are calling. Note though that some systems may not be able to adjust to 40 columns so your display may look messy. Also some systems provide a special configuration section for selection from the main menu where you may go and adjust the display to operate at 40 columns.

Below is just a small list of the actual number of BBS's available in Memphis. The numbers below I have verified as operating as of 7/27/87. List of other boards are available on these BBS's. Unless otherwise noted on the respective BBS all systems opera FREE of charge.

All boards and sytems listed are 24hrs.

3= 300 baud 12= 1200 baud 24= 2400 baud

SYSTEM	PHONE NUMBER	BAUD
TI-NET	(901) 386-1760	3/12 TI
RISKY BUSINESS	(901) 726-5623	3/12 TI
MASHCOM II	(901) 357-6774	3/12
MMS	(901) 365-3595	300 only
Stewarts Fito	(901) 761-5018	3/12/24
G.E.M.S.	(901) 278-4357	3/12
PC-LINK	(901) 345-9450	3/12
Duck Pond	(901) 755-5330	3/12
Flagship	(901) 382-1864	3/12/24
Surf City	(901) 377-8608	3/12
Cor. Cove	(901) 452-9028	3/12
Rebel Net #1	(901) 756-9915	3/12
Software Center	(901) 353-4563	3/12/24

FREE Demo's of Multi-user pay services:

COMPUSERVE (901) 452-8530 3/12
HOST CIS
ID# 7777,10111
PASSWORD FREE-DEMO

For the next one you need to set your monitor echo to ON as Genie does not echo characters you type back to you. By the way Genie has a good TI section.

Genie (800) 638-8369 3/12 When connected type HHH and hit ENTER. At U# type SJM11961,GENIE and hit ENTER twice.

PC PURSUIT Info BBS (800) 835-3001 3/12 PC Pursuit is an unlimited call long distance service for modem users...

Have fun communicating...Gary Cox

MOV AND WATER TOWERS

The following article coses from the July Dallas 99 Interface

newsletter. The article is written by Jon Hodges.

Some people have asked about what a MOV does (surge protector). The technical term is clamping voltage to a maximum level. To help the nontechnical types understand electricity, I like to compare voltage with water, because the comparison works so well. Imagine a water tower 200 feet high. When the water level is at 200 feet, cast iron pipes can handle the pressure just fine, but copper and PVC pipes have a little trouble holding up to the pressure, and plastic-coated carboard piping (my own invention for the sake of illustration, hereafter reffered to as plastic) won't hold up at all. If I cut a hole in the side of the water tower 30 feet up, obviously no more than 30 feet of pressure can build up, and we then can use plastic piping.

Translating that to electronics, we can say that voltage is like water pressure. The higher it is, the more likely that voltage-carrying devices will break down. Old tube-type equipment is like cast iron pipe. It could take tremendous abuse without suffering any decrease in performance. Solid State devices like transistors are like copper pipe. They still preform well, but are less likely to last through a high-voltage situation. MOS technology chips are like plastic pipe. Just a little excess voltage can cause a breakdown. AC line voltage is like 20 feet of pressure. When converted to DC, it is well within the tolerance of all the devices that will be using it. But increase it to 200 feet even for an instant, and you are bound to crack your plastic pipe, or ZAP your MOS chips. You might even crack your copper pipes, or transistors. Enter the MOV. It acts like that hole in the water tower wall at 30 feet that lets off excess pressure. As long as the voltage is below a certain level, it does nothing. But when the voltage rises beyond that level, the MOV shorts it to ground until it once again is below the maximum level allowed, protecting the electronic equipment from damage.

There are other compairsons with water and electricity that work well, too. Electrical current, measured in Amps, is like water current in cubic feet per second. When someone talks about a device using 2 Amps, imagine a water wheel passing 2 cubic feet-per-second of water. Now that could be a giant wheel going slowly, or a tiny wheel spinning very fast. The difference would be due to the pressure (or voltage) applied to the wheel. And, both wheels put out different amounts of power, or work. Power in electronics is rated in Watts. We get it by multiplying the voltage by the current. You can see that with low voltage, you need a lot of current to equal the work done by high voltage and a little current. That is why a 12 Volt Automotive system can use up more current that you think it ought to. Even though the voltage is low, the devices need a lot of current to pass for a little work to be done, like the giant wheel that spins slowly.

There is one more compairson that can be made, and that is with resistance. Everone knows that, given the same amount of water pressure, a 2" pipe passes more water than a 1" pipe. The opposite of passage is the resistance to passage. Then we can say that a 1" pipe has a higher resistance to water passage than a 2" pipe. But raise the pressure in 1" pipe, and you can equal the flow of the 2" pipe. Resistors cut down on the flow of current by

a certain amount, rated in OHMS of Resistance. A resistor rated at 100 Ohms will pass twice as much current as a resistor rated at 200 Ohms, as long as the voltage remains constant.

Well, are you waterlogged yet? You ought to be. Grasping the concepts of electricity is hard work, and not something that most people pick up quickly. However, through familiarity with the terms, you will find it easier to follow some of our discussions, and get the gist of what we are talking about.

LIBRARY BIT

This month's Library Bit is going to be a little different in the fact that almost everyone in the group has at one time or another been exposed to all of the information that is contained in the present user's group library or the down/load sections of TI-NET or Risky Business. I don't want to short change either of the two BBS systems either, because Pierre and Beery along with the respective sub-sysops do what I think is an excellent job of keeping the down/load files full of interesting programs. Gary Cox is a major contributor of new programs to the group through his contacts as Secretary. Also, Floyd Pemberton will bring to our group any of the program disks contained in the Dallas User's Group library as part of the exchange program that he has initiated with the groups that he comes in contact with while traveling with his work. A hard copy of the Dallas Library catalog is available at the meetings or I can furnish a copy on diskette if you are inclined to have it that way. There are a lot of educational programs available in the Dallas Library that I haven't seen before, many of which look rather interesting. The cover some complex subjects as well. I would like to thank everyone for their contributions to keeping the library growing and the programs interesting. The library now contains around 300 diskettes and I can only estimate around 2500 files. (Many programs use multiple files so the number of actual programs would be considerably less.)

This brings us to a rare and unusual opportunity that I am going to offer for members of the group. I have an older copy of the down/load file from GEnie. I am going to try to get a more recent version of the same file before the meeting and have a copy of it available. The down/load section on GEnie contained around 1500 files the last time I was on. There are programs there for everyone. Games you never heard of, source code for many of the popular utility programs, programs written in "c99", FORTH, and much more. In the interest of the group, I will call GEnie once a month and down/load requests for programs (within my own limitations) for members of the group. I will require a diskette in advance with your name and the name of the program you want down/loaded. The diskette should be formatted accordingly for the size of the file requested (The size of each file is listed with the catalog.) One disk per person, per month. (I don't feel lik that is unreasonable since I am having to pay for the connect time to down/load the files. (I may have to make further adjustments in the future, it just depends on how much this is going to cost

me.) The down/loaded programs will also be added to the library. Requests and distribution of programs will be handled at the meeting. That's all for this month, but I hope I have offered the inactive members some incintive to rejoin us at the meetings!.....D3

DID YOU KNOW

You know how the term "Bug in a program" or "Bug in a computer" came about? The meaning of the term (in case you do not know) is that there is a problem with a program or system. For example, if you wrote a program to add up some baseball scores and it did not add them up correctly, the problem is refered to as having a "bug in your program". The term "Bug" came about long ago when the first computers were introduced. Some engineers were getting ready for a demonstration of their new computer system when they turned on the system and it did not work. After taking apart the computer they found a small bug (a moth) stuck inbetween a relay. The moth prevented the relay from working thus preventing the computer from working. Thus the term "A bug in a computer" became a common term meaning something was wrong. The bug (although dead) is on display today at the Smithsonian insitute...

Did you know that typing "NEW" does not erase your computers memory? All "NEW" does is reset a pointer so that the computer does not recognize anything you had already entered into it thus effectively erasing memory but it is really still there. Then when you procede to type in new data the new data is written over what is already in memory thus physically erasing it. The reason computer does not actually erase what is in it's memory is cause it would take much longer to go through the entire memory and fill it full of blankes (0's) than to just set a stack pointer to the begining of memory simulating erased memory. You might compair this to writing a letter, when you get to the end of the page you decide you would like to start over and you go back to the top of the page and start erasing each letter and writing over what was previously there. So I am sure the question you have in your mind is "if it is not erased can I get it back?" The answer is Yes but not easily. A Gram Kracker would provide the easiest means to get it back with the direct memory editor. Through regular Extended BASIC it might could be pulled back using some CALL LOADS but I do not know how to do it. The best thing to do is do to not type NEW unless you mean it!...

Did you know that the TI99/4A was not the only home computer Texas Instruments made? Before the TI99/4A was a model called just the TI99/4 (no A). It had a chicklet keyboard and a few different features. The TI99/4A was an improvement over it. TI also had planned an upgrade to the TI99/4A! It was called the TI99/8 running on a 10MHZ-9995 CPU where as our TI99/4A runs on the TMS 9900 at 3MHZ. (MHZ refers to the speed of the computer.) Two hundred and fifty 99/8's were actually built and eventually went either the design team or TI employees. No more were ever made and the idea was dropped. TI executives thought the public would not be interested in a computer with a suggested retail of $600. The 99/8 featured built in 64K CPU RAM, 16K VDP RAM, (the 99/4a just has 256 CPU RAM) and 16K VDP. It also featured a built in

P-Code system, built in basic compatible with Extended BASIC along with additional commands such as LINE, DRAW and FILL for easy graphics. When booted up it offered several options, BASIC, P-Code or whatever module was plugged into the top. The 99/8 also featured a full "selectric" style keyboard layout. It also offered a "FAST" and "SLOW" microprocessor speed. So if like the TI Invaders cartridge was plugged in and run on "FAST" speed the results would be hilarious with outstanding speed. The "Slow" speed would have to be used to operate it at the speed it was designed for. Keep in mind this was back in 1984 with a system running at 10MHZ! Not many systems run that fast today. Even Zeneth (IBM compatibles) run at 8MHZ. That would have really been an outstanding upgrade to the TI99/4A! Unfortunately it will never be seen...

TI also had another computer called the TI99/2 which never reached the market. It was designed to serve the low end of the computer market kinda like the VIC-20's. Even if TI hadn't left the home computer market this one would probably never had been released because it would have competed directly with the TI99/4A...

As an added note I have heard that Texas Instruments has recently developed a microprocessor that will run at an incredible 50MHZ (using ECL technology) which is far beyond the speed of any microcomputers today and even most mainframes...Gary Cox

CHICAGO TI FAIRE

The Chicago-Area TI99/4A Users Group will be holding its fifth annual Chicago TI99/4A Computer Faire Saturday November 7, 19 from 9:00am until 6:00pm in the Ironwood Room at Triton College. Triton College is located at 2000 North Fifth Avenue in River Grove, Illinois (1/4 mile north of the Maywood Park Race Track.). The The theme of this year's Faire will be, "The Computer that Refuses to Die!" and expected response promises to be greater than ever.

This year, the annual Chicago Area TI99/4A User's Group's TI Faire will be the opening event in our first "TI Weekend." This year, the Chicago Users Group will be putting on its Faire in conjunction with the Milwaukee TI Users Group and the Wisconsin TI Council, who will be putting on their Faire on the following day, Sunday, November 8, 1987. Milwaukee, Wisconsin is approximately 1 1/2 hours away from the location of the Chicago TI Faire. Those groups or individuals who are interested in receiving more information about the Milwaukee Faire should contact them at the following address: Milwaukee TI Users Group, c/o Don Waldan, pres. 7760 South 76th Street, Franklin, Wisconsin, 53132, (414) 529-2173.

We are taking this opportunity to contact all known TI users group and to invite you to attend our fifth TI99/4A Computer Faire. We will also be contacting all known vendors, producers, and distributors of Texas Instruments home computer products, hardware and software, which are compatible with the TI99/4A. Our past

Faires were very successful and very well attended. In fact, for the last two Faires, we were forced to turn away some vendors, who waited until the last minute to reserve their booth space. For those of you who may not be familiar with our organization, a little background information may be in order:

Our group was organized over seven years ago, and has become one of the first national T.I. Users Groups with over 800 members; Presently, we have current members, literally, all over the world. We have a very active membership who represent a significant amount of purchasing power. However, admission to our Faire is not limited to our users group. With our massive publicity campaign, this year, we hope to increase our attendance over the 1500 people who were present last year. At our previous Faires, we have had people lined up waiting to enter the front doors, up to an hour before the Faire was scheduled to open. Also, the only problem which our vendors experienced was that few came prepared, with sufficient merchandise, to address the great demand of our buyers. Upon the request of our vendors, last years hours were extended. We will be using those same extended hours again this year.

As you can see, this will be an excellent opportunity for all TI loyalists to, a.) find out what products and/or services are available to the TI community., b.) to find out what new products are being made available for the TI family of computers, and c.) to make contact with those vendors who provide the above mentioned products and/or services In addition to providing product information, our Faire will also give lectures, seminars, and technical demonstrations/presentations. We will be dealing with diverse subjects such as Pascal (p-code) programming, assembly language programming, TI Artist, TI Writer, etc. In addition to the vendors booths, there will be demontrations of new products as well as seminars, door prizes, and game contests.

This year's Faire will be publicized in Computer Shopper, Micropendium, and other national publications. We will also be advertising on Compuserve, and other bulletin boards across the country. All users groups throughout the country will be notified by letter about this year's Faire. Last year, many users groups sent representatives to the Faire to gather information for their groups on the new products being offered.

In addition to our usual inclusion of PARTICIPATING VENDORS in our Faire publicity, this year, there will be something new. We will be publishing for the first time, a "Chicago TI Faire Book " This "Faire Book" will be sent out to all of our more than 800 members, all over the world, and to the many users groups that exchange newsletters with us. In addition to this, it will be available a the door of the Faire. This "Faire Book" will contain the following: a) An alphabetical list of all attending vendors, b.) a map of this year's Faire showing the location of each vendor, c.) numerous articles about our group and its related activities, d.) information relating to membership in our group, e.) general information about our Faires, and f.) a list of all speakers with a schedule of when their presentations will take place. We are encouraging our exhibitors to buy pages in our "Faire Book" instead of printing up a large number of disposable flyers, which

often find their way to the garbage can before they get to the attendees" homes. (Non-attending vendors, who wish to advertise their products, to our Faire audience, may also purchase advertising space in our "Faire Book.") We also wish to encourage users groups to advertise their respective organizations. As we are now a national organization, and as our newsletter is sent to members all over the world, and as we have attendees from all over the Unites States, it may be useful for other user groups to advertise themselves in our "Faire Book" and our newsletter before, after, and during the time of the Faire. (We have a monthly circulation of over 1000.) In this way, you may be able generate new members.

The O'Hare/Kennedy Holiday Inn was chosen for accomodations for our Faire attendees and vendors because of the high quality of its service, and its close proximity to our Faire, O'Hare Field Airport, and the tollway that is used when travelling to Milwaukee. The O'Hare/Kennedy Holiday Inn provides bus transportation to and from the airport (every 15-20 minutes). Because our group will be providing transportation to and from the O'Hare/Kennedy Holiday Inn, on the day of the Faire, any exhibitors, attendees, demonstrators, or speakers, using this facility, will be saved any additional expenses for buses, rented cars, cabs, or other transportation costs. (Any exhibitors, attendees, speakers, and/or demonstrators who make their reservations through our group will receive a special group discount rate of $65.00 per night per single or double occupancy.) It is also here that we will set up a hospitality suite for all of our exhibitors, demonstrators, and speakers. There will also be a "Friday Night Social Mixer" given at this same place. (There will be no charge, to our exhibitors, for either the "Friday Night Social Mixer" or the hospitality suite service.)

On Saturday night, after the Chicago Faire break-down, for a minimal charge, there will be a catered dinner at Triton College, for all exhibitors, speakers, demonstrators, and persons involved in the producing of the Faire.

For directions and/or additional information, about the Chicago Area TI99/4A Computer Faire, please feel free to write us at P.O. Box 578341, Chicago, Illinois, 60657. You may also call the Chicago group bbs at (312) 966-2342 (24hr 300/1200bd). If you wish voice contact call the hot-line and leave a voice message at (312) 657-1093 or call Grant Schamalgemeier at (312) 477-0690 from 9:30pm to 11:30pm C.S.T.

ADDITIONAL INFORMATION from Gary Cox:

We have received additional information about the Faire. The Holiday Inn which is suggested for all Faire goers, I am told is a First Class establishment. The brochure says they have a glass-enclosed pool, sauna, whirlpool, jacuzzi, indoor tanning equipment (Great for Rick Glisson), locker room, exercise room, putting green, game room, badmitton or volleyball area, restaurant etc... Special suites are even available.

A special discount has been arranged for the TI user group where a single or double/twin room is $65 a night. I have received

special reservation cards to reserve our rooms at the special price. If you need a card to reserve a room please contact me. Reservations must be received by 10/22/87.

A Friday Night Social Mixer will be held Friday night at the Hotel where light party food will be served. Cost will be $4. They hope as many programmers, engineers, vendors and users attend the Friday Night Social Mixer to meet each other. A coupple of systems will be setup if needed. Lou Phillips of Myarc has already said he will be at the Friday Night Mixer. A question and answer session may also be held that night.

It looks like a BIGGER and BETTER faire is in the works for this year and it looks like we have a really good place to stay near the Airport and near the college as I am assured by Don Jones Faire/Membership Chairman that the Holiday Inn O'Hare is a CLASS establishment.

Lets start making plans now for the Faire! Leave me a message on TI-NET or Risky Business or call me if you need a reservation card..Gary Cox

NEWS

Starting with local news, we have changed our plans for our General Computer Fair set for October 31st. We had planed on renting the Agricilterial Center in Eastern Shelby County for the event. However, we ran into some problems as at first we were told we could have the place for $500 and each time we contacted them we got a different story and a different price which ended up in the thousands of dollars price range. Needless to say we will not be doing business with them... Instead we have planned for another User Group Fair like we had in May where all user groups in Memphis will be represented. The Fair will be held October 31st from 10am to 6pm at State Tech. We are still working on plans for the BIG user group/vendor fair for a future date. The organization which will be sponsoring this event is the Memphis Area Computer Council of which I am Secretary.

I would like to Thank Dick Vandenbergh for taking over my posisition as Program Chairman. This really takes a load off of me so that I can better fullfill other work in the group. Dicko already has some good demonstrations planned for future meetings and it will be nice to have a slight change in format. In case you are not familiar with Dicko he was Program Chairman years ago and has also held other offices in the group such as Vice-President and is currently teaching the C99 classes. As for our newsletter we think we have found a place to continue to print the newsletters so hopfully it will all work out... Thanks also for those who have volunteered to demonstrate items at our meetings...

CorComp Inc of 211-G E. Winston Road, Anaheim, CA 92806 has released a new word processor called Writerease Version 1.1 . Requirements are at least XB, 32k, disk drive and printer. The one MICROpeidium had a complete review of it so I will not go into detail on the program. The reviewer did give it a Performance grade of A, Ease of use A, Value of B but with the

biggest problem being documentation which received a D. The program received a final grade of a B. One of the nice features that I sav off hand was the fact no Formatter is needed to print your document and the program has a spelling checker. This program might be a good alternative to TI-Writer if you are tired of using TI-Writer or would like to upgrade to something else... Retail price is $49.95.

Rave 99 of 112 Rambling Road, Vernon, CT 06066 now has in stock new product called a Speech Adapter Card for the PEB. Accordi to their letter "It allows you to move your speech synthesizer card into the PEB, cleaning up the appearence of the corsole. It also makes the system operation more reliable due to fewer external connections. The card is 100% compatible with all software ard hardware." Price for the card is $49.95 and requires that you already have the Speech Synthesizer.

New from Asgard Software of P.O. Box 10306, Rockville, Maryland 20850 is a game called LEGENDS. It is a sequal to the old TI game "Old Dark Caves". Over a year was spent in development of this 4 player, 170K byte, fast running game according to their advertisement. A few of the features are a character generator for designing your own players, 44 distinct game screens, 50 large monsters, each unique, 6 separate dungeons to explore in search of clues, weapons or treasures. You can stay at Inns, use teleporters, drink potions, avoid traps, pitfalls and wandering monsters. A custom designed assembly language routine accesses over 60,000 bytes of graphics data at very high speed. They say "This allows us to produce some of the most impressive graphics ever seen on the TI". Although I have not seen the game it sounds very impressive.

The Bunyard Group of P.O. Box 53171, Lubbock, TX 79453 is offering a Hardware Manual for the TI99/4A. It describes the console design, custom chip operation, TMS 9900 H/W organization, TMS 9900 Instruction Set, Interfacing pitfalls, console schematics, PEB card description, GROM simulator design, Extended BASIC module description ard schematics. Price is $19.95 with volume rates available upon request.

Remember the Chicago TI Faire will be comming up November 7th. I should have complete information elsewhere in the newsletter telling about it. Well this is all the news that I have for this month so see you at the meeting...Gary Cox

COMPUTER MAINTENANCE

Having trouble with computer lockups or just getting your computer started? If so these two articles might solve your problem.

The first part of this article is from the May 1986 Central Iowa Users Group newsletter. The article is by Ron Rutledge. P cautioned if you do the following operations you do so at your o risk.

Dirty contacts can screw-up any electrical device and the 4A is not any exception. The only place you are fairly likely to run

into this problem is in using command modules. Both the module contacts and the port itself can become dirty but cleaing the port itself it a big job as you have to disassemble the console. The good news is that cleaning the cartridge will almost always suffice and can be done quickly without any special tools or cleaners. All you need is a regular screwdriver, some sort or rag, a standard pencil eraser, and in some cases a medium phillips screwdriver.

Remove the screw from the center of the cartridge if there is one. hen pry the clips in the outside slots to the bottom left and ight of the center screw. If there is a clip in the center instead of a screw, pry it back after the botton left and right slots are pryed off. If it should bend off don't worry, it won't effect the performance of your module.

The module board can now be removed. Do this carefully and note how the spring-loaded "door" is assembled if there is one so that you can put it back together if it pops out. Once you have the board removed take your rag (a kleenex will work but something cloth is much better) and rub off any residue from the edge connector contacts. Remember to do the contacts on both sides if that particular module has them. Once the worst is removed take any soft rubber eraser ard "erase" the contacts until they become dry, clean and shiney. You need to do only about the outer half of the contacts as that is more than ever gets used (you can see the scratch markes on the contacts). Once this is done simply put the cartridge back together and go. Some symptoms of dirty contacts are the console locking-up, strange errors where none occured before, etc (my XB cartridge gives me a syntax error when there was none for example). Don't jump to clean a cartridge on your first error, it could be a lot of things like static, not having the module in tight, or a number of other things. But if you find you have a continuing problem cleaning the contacts is quick and free and may correct what was wrong.

CONSOLE cleaning by Gary Cox:

Before attempting these procedures READ this article through at least once before proceeding. Also be advised that the information contained here is my opinions and is accurate to the best of my knowledge and you procede at your own risk. Also this may void any warrenties you may have on your console if you have recently purchased a new one from some place like Texcomp.

Before begining you need to discharge yourself of static electricity so that you do not zap any chips. Touch something grounded like the back wall of your PEB. Also be sure to keep up with the screws that you take out in doing the following project. Lable the screws if necessary because if you are like me when you get through you discover the screws had babies because you are left with screws even through you have everything put together...

Sometimes cleaning the cartridge is not enough and the cartridge ort inside of the computer must also be cleaned. (This first procedure might make your problem worse and thus you will have to do some more work which you might not want to get involved in so read through this whole article before attempting these procedures

to see if you are willing to go all the way. Ultimately though this should solve most console lockups...) A quick and short way to clean the cartridge port is to take some smoking pipe cleaners (little strands of wire with fur on them) and bend one end into a circle. You can obtain pipe cleaners most anywhere. (Do NOT use anything that has lint or comes apart!) Take and spray some good contact clearer onto the pipe clearer (I use TV tuner cleaner from Radio Shack, BE SURE it DOES NOT HARM PLASTIC!!!). Take and press the rounded end into the module port being careful not to move it to one side or the other. The contacts in the module port are loose and moving the pipe cleaner in a crosswise motion will bend them! Just place it straight in and pull it straight out. Move it over and do it again until you are across the module port. Do this several times using a new pipe cleaner as it may get dirty. When finished use a dry pipe cleaner to kinda dry out the module port and also wait a while before turning on the computer to make sure that port is dry! This has either solved your problem or made it worse. If it has made it worse you will have to continue with this article and take apart your console to get directly to the module port. So if you are leery of taking apart your console you may not want to use the pipe cleaner and just stick to cleaning the cartridges but cleaning both should help you out greatly. The thing that might make your problem worse, which I mentioned, when using the pipe cleaner is that the consoles are now getting old. Foam rubber was placed inside the module port to dust off cartridge edges when you stick in a cartridge. However; with age this gets a little loose and sticking in a pipe cleaner may loosen it and cause it to block the contacts so then you will definitely have to take apart the console and remove the foam which I am about to show you how to do. In fact, foam blocking the contacts may be your problem already as the foam may have already fallen back blocking the contacts thus causing your lockup problems. To solve your problem you will need to take the console apart and remove the foam and clean the edge connector.

To do this first remove the 7 screws in the back of the console. Then pull out the on/off switch (it pops out) and remove the back. With the console up side down (back side up), there are three more screws you should remove holding the motherboard in place. They are located at middle left and top right of the metal casing which sourrounds the motherboard. The metal casing should not be removed. On the top center of the motherboard is another screw which you can see through a hole in the metal casing. This must be removed also. Do this carefully as you can easily drop that screw and loose it. If you drop that screw inside of the casing, you need to get it out. NEVER leave any loose parts especially metal floating around in the console as it will most likely short out some contacts.
Now carefully remove the motherboard making sure you do not put any stress on wires and do not force anything! It should come up without too much trouble. The internal power supply may give you some trouble in getting the motherboard out. You can take the screws out of it and move it out of the way if you would like to make it easier.

You should now see a black female card edge conecter mounted onto a male card edge connector plugged into the motherboard. This small device is what your cartridges plug into. It is called an

L-Shaped connector or 90 degree card edge connector. This is the object of your attack. Note the direction of which it is plugged in (so you can plug it back in the right way later) and now pull it out. It should easily snap out. (By the way you can obtain a new card edge connector by calling TI dealer parts and ordering one. Please note though that TI does not sell any home computer software or equipment but sometimes will sell some of the small parts.)

Now remove the top of the the L-Shaped connector which covers the female connectors. It may not look like there is anything there to remove but there is. It is held on by some little snap on clamps. Just take your fingers and pry them apart and pull it off. It should come off very easily. Now the female contacts should be exposed (I didn't realize this was going to be an X-RATED article). Again (if you did not clean them before) clean them with the pipe cleaners following the same directions above. On the top which you removed is the foam rubber. Take a small knife and remove the foam making sure you get all of it. The foam does help keep dust out but I have found since it is getting old it is causing more trouble than good and in my opinion should be removed. Now snap the top back onto the edge connector. Take an eraser and clean the male contacts on the L-Shaped conector and wipe it off with a rag.

If you have trouble with your keys double striking or not responding it may be a dirty keyboard and at this point you may wish to replace it with a TI99/4A keyboard from Radio Shack which sells for around $4. Just unplug your old keyboard from the motherboard and replace it with the Radio Shack TI99/4A keyboard. These keyboards Radio Shack has are the original ones placed in TI99/4A's. It does not matter if you have black keys and the Radio Shack keyboard is white.

Now it is time to put it all back together. If you have not done so you may still have to remove the power supply (bottom left circuit board on computer) as it makes it difficult to get the motherboard back in place although with a little work I was able to get it back in place without removing it. You can either plug the L-Shaped connector onto the mother board and then place the motherboard into the console housing (best way) or place the L-Shaped edge connector into the console housing and place the mother board on top making sure it gets plugged into the motherboard. There is a little slot the L-Shaped connector drops into on the console housing so make sure it goes into that slot with it facing the door of the console housing where you plug modules into.

Now replace all of the screws on the motherboard. Be careful on the center screw through the metal housing. Be sure you place the plug that connects your internal console power supply with the outside power supply back in it's place at the back of the console before you put the back on the computer.
This should now help your console lockup problems. Clean your cartridges as well. If you do not want to take apart your cartridges just stick an eraser down the side of the cartridge (must use a small eraser) inside the door and try to erase the surface of the contacts and then blow out any eraser junk you may

have left in there.

I have done this to both TI99/4A consoles that I own and it has greatly helped my lockup problems. I demonstrated how to do all of this at a meeting a while back. If you would like to see it again just ask...Gary Cox

PILOT LICENSE

For those of you who are articipating the wonders of flight or the thrills of barnstorming, I have some good news/bad news for you...the good news is that this artical is about Programmed Instruction, Learning, Or Training (a computer language); the bad news is, this article is NOT about flying. (Gary, kindly note that I am fulfilling the obligation of a PILOT article.)

Some time ago, I finally received my copy of DataBioTics emplementation of PILOT for the TI. Eagerly articipating all of the wonderfully instructive programs which I intended to write, I devoured the manual...right up to the point where I determined that DBT PILOT really (and I mean REALLY) needs either two (2) diskette drives or at least one (1) that is double sided. I immediately went back to the drawing board on that one. (For those of your who don't know me, I am an Old-School Hacker but I operate one a bit of a shoe-string budget.) I could count among my Beasties a single-drive TI, but it was only a single-sided drive!

I now count among my Beasties a dual dual-sided drive TI and I am venturing forth once again into the wonders of PILOT. The important first step was undertaken post haste...I copied both sides of the DBT Flippy-floppy issue-diskette onto a single floppy. (Important Note: PILOT expects to be running from a diskette named PILOT. This can make for a sticky bit of file copying if you try to name the destination diskette PILOT because most copy programs are a bit hesitant to copy files from on diskette onto itself.) That done, I safely tucked my issue-diskette away and returned to the manual.

By the way, the manual that comes from DBT is adequate if you have some knowledge of PILOT prior to reading it; however, it is not intended to be a definitive essay on the language. I happen to have an manual for PILOT on another system (a CP/M, Z80 based Beastie) and decided to compare the two manuals and implementations. DBT has included all of the PILOT primatives (which is to say, all of the basic commands are possible); however, the initial release did not include any file I/O capabilities. So much for the bad news, on the good news side we have the fact that there is an "external instruction" instruction (X:, logically enough) which allows the user to write assembly language functions, include them in the linking, and access them from a PILOT program. Provision is made for passing parameters to the user routine(s)...unfortunately, the manual falls a bit short in specifying how the user routine is to determine the location of the variables (or their values). (I am intending to investigate this further because of the need for some means of accessing a floppy drive.)

Meanwhile, using the copied diskette, I proceeded to try out the PILOT Compilation System. I compiled and executed one of the sample programs which came with the kit. The source code is listed to the screen as it is compiled...which can be nice if you're not real sure whether your Beastie is doing its thing or has gone to hide in a corner. The listing is also stored in a file listings. The result of the compilation is not initially object code, but rather an assembly language version of the PILOT program. (Save that thought for a later reference!) The DBT Pilot Compilation System then proceeds to assemble this last file, producing a compressed object code file (and an assembler listing file).

At this point, you would hope to have a program which could be run. Unfortunately, there is one more step...you have to link the compressed object (CO) code file which you have created with any other CO files (for example, any of the support routines which came with the kit) needed to complete the program. (The linking is done from the editor-assembler level by doing a "load and run" specifying each of the modules. It should be noted that one should use the SAVE command to create a program file which one can then RUN.)

Okay, so maybe it isn't exactly the easiest, most straight forward programming system around. I would like to point out that, while there are easier "Compilation Systems" out there, I think that this is a very worthwhile tool for anyone who wants to get the hang of assembly language. Why? First and foremost because of the relative ease with which you can create interactive, functional programs capable of doing calculations, conditional branching, and subroutine executions. (Remember when I told you to save that thought for later reference? It's now later.)

Consider the simple command structure of PILOT:

```
     *NEXTONE T:"What is your name? "
     A:$YOURNAME
```

The above lines will cause the question to be T(yped) on the screen and the answer to be A(ccepted) from the keyboard. At this point, the program has acquired the user's name. Note the use of the '$' to indicate a 'string' variable...shades of BASIC! The other point to note is that line labels (useful for branching under program control) must begin with the '*' character.

```
     R: We know YOURNAME, now.
     M: Gary, Dicko
     JY: *INSULT
     *SAYHI T:"Hello, ",$YOURNAME,", how may I help you?"
     A: $ANOTHER
     T:"Sorry, I can't do that yet."
     J: *NEXTONE
     *INSULT T:"You don't get nooo respect"
     J: *NEXTONE
     E:
```

The program then has a R(emark)...see, all the pieces are there, even the documentation lines! The user response is then M(atched) against two possibilities. If either of the listed possibilities matches the user response, then the program J(ump)s (on Yes) to the label 'INSULT. By now you can probably follow the rest of the

lines. (If you have trouble with the last one, it's an E(nd) statement which is necessary to end the program.)

Calculations are performed, as you can probably guess by now, by a C(ompute) command. Numeric variables must begin with the '#' character, by the way. (All these special characters are probably driving th Newsletter Editor's text editor crazy!) Calculations are limited to the four basic functions of '+', '-', '*', and '/' (i.e. add, subtract, multiply, and divide). Anyone who worked with a 4-function calculator should know the various tri to accomplish such calculations as square roots...here's your chance to re-use that knowledge.

Speaking of re-using, I almost skipped the other primitive. There is a U(se) command which coresponds to a subroutine call. To create a U(sable) routine, one just appends the *LABEL through E: lines of the routine to the end of the main program and then places a U:*LABEL in the desired location. For example (almost straight from the manual), the following would provide for a U(sable) CLeaRSCReeN command:

```
*CLRSCRN C:#COUNT = 0
*LOOP T(#COUNT = 0):"THIS LINE WILL SCROLL OFF THE SCREEN"
T:
C:#COUNT = #COUNT + 1
J(#COUNT < 24): *LOOP
E:
```

A final piece of the PILOT syntax shows up in this last example. The J(ump) statement illustrates the use of a conditional on a statement. Of even more interest is the fact that the conditional can be included on other statements. For example, the T(yp command at *LOOP in the routine is conditionally executed.

One last comment on PILOT in general. As I mentioned at the start of this article, the fact that PILOT creates an assembly language equivalency (ALE) file means that PILOT could be used as a means of developing the interactive portion of an assembly language program. The ALE file could probably be incorporated into other programs in ALE-producing languages (e.g. 'C') or could be used to provide interactive HELP programs. The ALE file could prove useful in studying the TI assembly language in and of itself.

In summary, I think the DBT PILOT implementation is a useful addition to the TI Toolkit. It has the prospects of allowing the novice Hacker to develop the AL skills needed for really good Hacks and it provides the 'casual' user the quick-program capability which was it's original purpose. The ability to extend the capabilities through th use of the X: command leads me to contemplate such uses as an interactive BASIC Programming Assistant Program which would ensure that there was a Next for every FOR, etc. (I have contacted MyArse with the proposal and am hoping to get a contract to develop BASICPAP for tem.) In fact, as soon as I get the X:-code written and working for file I/O, I intend to implement a version of the PILOT example from my Z system...a PILOT program which lets the user write PILOT programs which are similar to Multiple-Choice Tests. (Maybe MyArse would be interested in that one!)...Ralph D. Wilson II

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