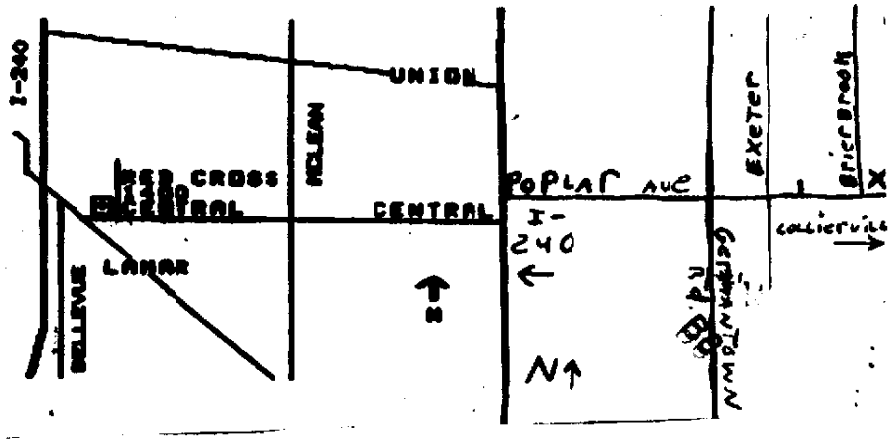
NOTICES

MEETING
7:00 P.M.
Thursday, April 17
Red Cross Building
1400 Central Av.

WORKSHOP
9:00 - 12:00
Saturday, April 26
CLUB HOUSE LOUNGE
FARMINGTON GATES APPARTMENTS
2216 Brierbrook Rd.
GERMANTOWN

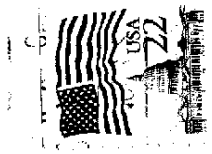


MEMBERSHIP APPLICATION

NAME _____ |_| $15.00 FAMILY
ADDRESS _____ |_| $10.00 JUNIOR (under 15)
|_| $10.00 ASSOCIATE (N/L only)

CITY _____ ST __ ZIP _____ INTERESTS _____
PHONE (___)___-_____ _____
EQUIPMENT & SOFTWARE: _____ _____

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



MID-SOUTH 99 USERS GROUP

P.O. Box 38522 Germantown, Tn 38138

UG 2/86
DALLAS TI USER GROUP
1221 MOSSWOOD
IRVING, TX 75061

Newsletter for the MID-SOUTH 99 USERS GROUP Vol 4, #4 April 1984

tabits

PRESIDENTS BIT

NOW IS THE TIME FOR ALL GOOD MEMBERS TO COME TO AID OF THEIR USERS GROUP. As the length of time increases, since the TEXAS INSTRUMENTS pullout, the ranks of all TI-99/4A USERS GROUPS seem to be dwindling. We are NOT immune to this dilemma. The Group Officers try very hard each month to produce an informative newsletter and an interesting user meeting. We try very hard to keep the members abreast of new hardware and software, including demonstrations, when available. We strive to educate those who want to know and understand the innermost workings of our computer. The turnout at the last meeting was very poor and the Officers are searching for answers on how to get members back to the meetings. WE NEED YOUR HELP. Please take the time to call me or any of the other Officers at any time with suggestions. Feel free to stop me anytime with suggestions on how to regain computer interest in our group. Your suggestion COULD be the one that puts life back into our users group. Be proud of your group and let others know about the MID-SOUTH 99/4A USERS GROUP. Remember, THE TI-99/4A WILL DIE ONLY IF WE BECOME TOO COMPLACENT AND LET IT DIE... IF THIS HAPPENS, WE HAVE ONLY OURSELVES TO BLAME.

ADOLPH BUTLER, our CASSETTE LIBRARY CHAIRMAN, received over one hundred new programs at the last meeting. See him to check on the new things. We are constantly updating the DISKETTE LIBRARY, so check the library at each meeting. For those of you with communications capabilities, the MID-SOUTH 99/4A bulletin board is going strong. It is one of the larger boards in Memphis. It can communicate at 300/1200 baud using TE-II protocols for uploading and downloading. With both GRAPHICS and SOUND capabilities, It has to be rated as one of the finest MID-SOUTH bulletin boards. Again, Lets all strive to keep the Users Group going forward in both education and enjoyment. If everybody pitches in we can assure ourselves a long and prosperous relationship with our computer...

FREEWARE UPDATE

99-Calc is now available as FREEWARE for the TI. 99-Calc is an electronic spreadsheet program in which you can create your own spreadsheets using row and column titles, numerical values and

formulas.

99-Calc automatically recalculates and displays updated answers when you update an entry on the spreadsheet.

99-Calc runs in Extended BASIC and is available on disk or cassette tape. Instructions are included on the disk or cassette to be printed out on your printer so that you may produce as many copies as you wish. You can save your spreadsheets for future use of updating.

Your spreadsheet can be easily organized to meet your needs having up to 33 rows and 14 columns. Many functions are performed with the press of a commandkey such as "average, compute, delete, help, jump, load, new, print, quit, save and total". 99-Calc comes with a sample spreadsheet which has been saved to help you get started.

To obtain 99-CALC send a blank disk to the address below with a self-addresed return disk mailer with sufficient return postage affixed. (offer expires June 1, 1986) However, if you would rather, just send $5 cash to cover costs and I will provide the disk, mailer and postage. Please don't forget to include your name and address and specify disk or cassette. (XB and disk or cassette is all that is required to run program...)

Send materials to:

PHIL BARNES
24631 VIA SAN FERNANDO
MISSION VIEJO, CA 92692

CODES-N/L

TI editor or TI formatter ?" that is the question...
Some folks seem to think that the Editor of TIWriter is for writting "Just the facts, Mam " and dully using PF to get a hardcopy for proof reading, then placing transliteration codes into the text and then watch formatter unexpectedly re-arranging your printout.
Using control characters inside your TI Editor text may not be as hard as you think. It gives you as much flexability to jazz up your printouts as the formatter, and in my opinion, without the fuss. Here's how:
Control "U" (CTRL U) enables the TI Editor to display or send control codes to a device or file. Conrtol codes usually refer to ASCII characters below ascii 32. These codes are standardized in most cases to allow different devices to interpret the codes the same way..."a carriage return is a carriage return is a carriage return". Pressing CTRL U while in the Editor toggles the keyboard in or out of the control key mode (you will see a blinking underline cursor). WALA! the keyboard is not as it seems. Touch any key and strange characters will appear...these are control characters. Getting these characters to perform for you will depend on how your printer interprets these codes.
There are two important tables that you need to cross reference to see what your printer can do. The first is in the appendix of your TIWriter manual (p. 146). The second is in the Users Manual of your printer under Function Code summary (or special character code table, etc). Another table which may come in helpful is the ASCII reference table p.145 of TIWriter's manual or in your

printers manual.
With a little experimentation you can have you printer "doing things you've only read about". For the purpose of simplicity, in the following tables CTRL U SHIFT A means the key input sequence of CTRL U pressed at the same time, and then SHIFT A at the same time.. likewise, FCTN U means keystokes FCTN U together. Remember that CTRL U also gets you back to the standard key mode. If you encounter ESC in the table then replace it with keystrokes CTRL U and FCTN R, which produces an ASCII code value of 27. CTRL U FCTN R can be linked together with other letters or numbers to produce escape code sequences, but be careful, if the sequence requires a number, then the appropriate ASCII character needs to be entered in the place of the number, eg. O is CTRL U SHIFT 2 not the keystroke "O", similarly, a value of 65 can simply be replaced with a capital "A" or if the table calls for an "A" then "A" will usually work. Control codes and escape sequences dont occupy space in you printout, but they do at your monitor, so alignment of columns in tablular form may take a little bit of effort but can be quickly mastered if the word-wrap mode is off (hollow cursor).. Another hint, to cut down on keystrokes, use an unusual character(s) throughout your text where you plan special print to occur and then use the RS function to replace the character(s) with the needed control codes.
The following table is supplied to help Gemini owners to do many of the functions of which the Gemini is capable. There are many more codes available on the 10X and I'm sure other brands can be manipulated in much the same fashion. Please feel free to send codes that jigger your printers ram so that we can pass on this information to our readers.

Mid-south 99 users group, Mac Swope

TI FEST-WEST

The 99 Fest-West opened its doors to an eager crowd of 99'ers on Saturday, March 1, at the Shrine Exposition Hall in Los Angeles. The show was held on the upper floor in conjunction with a larger Computer Sellathon and Espo on the main floor.

The first major event was a presentation by Craig Miller, president of Miller's Graphics, who introduced a new piece of hardware, an IBM keyboard interface card. According to Miller, the card will go into the PEB and allow purchasers to use any IBM-compatible keyboard. The 4A will still need to be connected, but it can be put aside in a spot where you can get to the module port.

By using an IBM keyboard, users will have dedicated cursor keys, a 10-key numberic pad and programmable function keys! The interface card will have a 32K buffer that will allow for macros and batch files. Due to the current flux in the chip market, no definate price was given, but Miller said he will try to keep it as low as possible since users will still need to buy a keyboard. (IBM keboards sell for around $55-90) The keyboard buffer will be battery-backed and users will be able to save the keyboard configuration to disk. Miller anticipates he should be in production in 10-12 weeks.

Compuserve and The Source also attended with live hookups to the network connected to others across the country with TI news such as Ron Albright... Several FREEWARE authors were present as

well demonstrating their FREEWARE. (I was offered to attend but unfortunately could not make it so I sent a video tape.) Many vendors of both hardware and software attended such as Texaments, DaaBioTics, Asgard Software and Bits and Chips... Among the more noteworthy products was TI-Artist in which a number of PC owners almost purchased it before they found it was for TI only, quite a testimony to the program.

Among many others who attended was Lou Phillips of Myarc Inc who presented the big event for the day. For openers, he demonstrated the new Extended BASIC II. A demonstration and explanation of its many features brought an enthusiastic response from the audience. XB II has many Unix-like commands and operates much faster than TI Extended BASIC. Phillips pointed out that the XB II requires the Myarc 128K card. Perhaps the most impressive demonstration of th XB II's power was when Phillips listed a program to the screen (at about three times normal speed) and then opened up a window and listed the program to just the upper left quarter of the screen (at blinding speed).

Following the discussion of XB II Phillips displayed the keyboard for the new computer his company is designing, along with a power supply board and a wire-wrapped motherboard. The computer was not operating, but he promised a working model would be demonstrated on March 15 at the New Jersey Texas Instrumets Computer Owners Fun Festival (TICOFF).

A detailed discussion followed Phillips demonstration of XB II. He concentrated on the architecture and technical aspects of the new computer. Phillips noted that the chips his company is using use intelligent instructions while many of the routines used by comparable machines are done though software. He hopes to be able to take orders by June.

Edited from MICROpendium by Gary Cox

NEWS

The TI Fair in Nashville is scheduled for May 3rd from 9:30 a.m. to 5:30 p.m. and 12:30-5:30 p.m. May 4 at the Cumberland Museum in Nashville Tennessee. Bob Teague, president of the Music City 99ers User Group, said the focus will be on southeastern regional users groups, and that guest speakers are scheduled. For further information contact Music City 99ers at:

Music City 99ers User Group
P.O. Box 24866
Nashville, TN 37202

Bob can be reached by phone at home (after 6pm) at (615) 366-4220 or outside of Tennessee at work Mon-Fri during regular business hours at 1-800-251-1852. This fair will not be on the scale of the one that was held in Chicago but it will give us TI users in this part of the country a chance to get together and have a fun time meeting each other etc... Hopfully some third party vendors will be there to talk with as well. We discussed at the last meeting about our group setting up a table at the fair and arranging transportation up there ect... . Mac Swope will be in charge of these arrangments so you should contact him if interested.

Some discussion in the group has also been going on about setting up a full scale TI Fair to be held here in Memphis. This is still in the discussion stage for a time in the future but we would like input on the idea from people in our group and those that receive our newsletter. Memphis is in a central location in the south and we could try to arrange a large meeting place such as Memphis State so we will have plenty of room. Please write to us and tell us what you think. (Please direct your comments to Gary Cox.)

TI SWAP-N-SHOP

A TI99/4A Swap-N-Shop is scheduled to be held from 2 to 4pm April 13 at the Author Mag Center behind MRI, Rockhill Road and Volker Boulevard, Kansas City, Missouri, phone (913) 371-1092. There is a $1-2 registration fee for the event, sponsored by the TI99/4A KC Users Group, P.O. Box 12591, North Kansas City, MO 64116.

HAPPY ANNIVERSARY! March marks the first year in operation of our TIBBS bulletin board. TIBBS was started about a year ago as a very basic system with only 32K and TIBBS has now grown to one of the largest boards in town and one of the largest TIBBS's in the country with over 300 users many of which are regular long distance callers. We have even had callers from as far away as Canada. TIBBS provides a means whereby people can carry on conversations with each other (VIA computer) much like CB's. A lot of information is also available on TIBBS on new products and special deals etc... Some of the information in the newsletter first appears on TIBBS. 25-30 programs are also available for transfer from our system to yours if you call using a disk system which provides you with a means of obtaining programs between meetins. I know a lot of people in the club have modems but some of you do not call, try calling sometime (use TE2 or FAST-TERM) I think you will be surprized! All that is needed to call is the TE2 cartridge, an RS232 (standalone or in the PEB) and a modem (300 or 1200 baud). The number is 901-357-5425 24 hours a day 7 days a week and you do not have to use a TI to call. (The system will explain to you how to use it when you call.)

According to a reliable source Unisource Electronics is going to discontinue it's TI Product line. After 2 days of trying to call them on their 800 number (busy) I have not gotten though to confirm this. The competition with the other large companys such as Tenex, Triton and Tex-Comp... was probably too much for them. No further details are available.

Ryte Data announces a GPL Assembler for the TI. This program provides the power to write, edit and assemble true GPL programs for the TI 99/4A. Create code that accesses console operating system routines directly. Develope programs that use the GPL interpreter and all the features of the TI99/4A. One of TI's major secrets was the GPL interpreter contained on GROM chips in the 99/4A console. This internal code, "Monitor" and the operating system, was never documented. Many of TI's routines, programs, languages and command modules are written in this "Graphics Programming Language". It is now possible to write your own "modules" or update GPL modules (with the new hardware devices

such as Maximem and Gram Kracker which are now available), modify disk based programs written in GPL and create working GPL programs such as Myarc's new Disk Manager III program. You can even modify the TI99/4A operating system! New hardware devices will be available to take full advantage of this important software package. New TI products from Germany are also expected to be available soon, according to Bruce Ryan of Ryte Data.

Ryan says he learned of the products by talking to Manfred Wilhelm of Mechatronic GmbH at the TI Fest West in Los Angeles March 1-2.

Ryan says Wilhelm told him he would have a model of a 128K card for the PEB "ready to go in 30 days.". An 80-column card will be available around June 1, he says.

With the 80-column card, 256 colors will be available and it will be compatible with all TI software, Ryan says. The card would have a resolution of 256x208 pixels and allow multi-colored sprites in all 256 colors, with 192K video RAM. This is a version of the 99/38 chip without the MFX option and will put out RGB or composit monitor signals, according to Ryan, who says samples should be available in mid-May. Users will be able to access 80 columns directly using assembly code, Ryan says.
For information about the above and the GPL write to:

Ryte Data
210 Mountain St.
Haliburton, Ontario, Canada K0M 1S0.

The 99 Home Sentry, usable for home security or just for convenience, has been developed by CorComp in coordination with X-10 USA Inc. With this system the user can turn lights on or off or can dim or brighten them with as well as turning other appliances such as a stero on and off. "You can use it as security, to make it appear that someone is home, or just for comfort, to turn on the heat and the coffee in the morning," Jackirae Sagcuspe of Corcomp said. The system is called Powerhouse and once programmed by the computer you may then turn off the computer or use your computer for other uses thus it does not tie up your system and you do not have to leave your system turned on. The package containing the software, cable and interface would retail for "around $100". The small modules for the appliances sell separately, she said, because of users' differing requirements. For further information, contact CorComp Inc. at:

CorComp Inc.
2211-G Winston Rd
Anaheim, CA 92806
(714) 956-4450
(or look in the latest Tenex catalog.)

Triton (1-800-227-6900) is now offering 4A FLYER. It is the only 100% Assembly Language flight simulator for the TI99/4A. Your mission is to deliver cargo to several airports in your beacon's range. Real-time displays help you react to adversities such as changing weather conditions. Guide your plane over realistic senery, to and from the airports. Select the combat mode and line'em up in your sights. The program will run with just the console as it is in a cartridge. A forward view out of

the plane is shown on the screen for a realistic flight. Price $19.95 programmed by John Phillips. Triton also offers a module adapter for people who have consoles that say "Texas Instruments V2.2" when you turn the system on. The V2.2 consoles were modifyed by TI so they will not operate some third party cartridges without this adapter. Price $29. Made by Corcomp.

Thomson Software is scheduled to discontinue retail operations April 15. Don Thomson of Thomson Software says he is closing down because he will begin a new job with a large data processing firm, and has been asked to stop business because of conflict-of-interest considerations. He will be offering several of his programs to user groups to distribute and I have written to him to obtain these programs.

For cassette owners a VERY good source of programs for cassette tape is Tigercub Software. For a catalog send $1 to:

Tigercub Software
156 Collingwood
Whitehall, OH 43213

SST Software is now offering a BASIC compiler for the TI. A compiler will transfer your BASIC program into Assembly Language for much faster execution speed..! For information write to:

SST Software Inc.
Box 26
Cedarburg, WI 53012
(414) 771-8415

Support your local TI Users Group! Users groups have become the main source of support and assistance for TI owners. The users groups are the main source for information and assistance that otherwise would probably not be available. User groups provide a source of free programs, discounts, demonstrations of new products, assistance with equipment problems, technical information and just a fun get-together of people with a common interest.... Let's stick together and we will be around a long time to come! TI 4 EVER!!!

Gary Cox (with portions edited from the March 86 MICROpendium)

PROGRAM BIT

This months meeting will be a very special one with some very unique never before demonstrated materials. The first item that will be demonstrated by me will be the Plato educational software. The Plato Software is designed by Control Data and is probably the best educational software for any computer and the next best thing to actually taking a class in a subject. According to my information over 300 Plato series are available ranging in grade levels from first grade to college level and in subjects such Sience, Physics, Mathmatics, Foreign language etc... All Plato software series are still available.

The second demonstration will be of a new public domain program just received. This one the kids will like as it is a program that runs in XB with the speech synthesizer where Ernie

and Bert from Sesamee Street carry on a convesation where Bert gets angry at Ernie. However, what will of interest everyone is that the picture really looks like Ernie and Bert and their speech sounds just like them! Then to top it off it is all done in Extended BASIC using words not in the XB vocabulary!

The third demonstration will be by Mac Swope of a robot plotting system called Penman. The system consists of a robot connected by a cable to the TI where it receives it's commands. Plotter Software is included where you can draw line graphs, bar or pie charts etc... on the screen and the robot will then reproduce the picture on any size paper using any of 3 different color pens which the robot can change as it is drawing producing multi-colored pictures! Penman is simiar to those very expensive computer aided engineering design plotters that engineers use to produce blue prints etc... Which with this device you can create anything you wish including blue prints! The robot has a motor which carries it across the paper so it can draw the pictures. Sensors on the robot are used to guide it...

If you have not attended the last few meetings you will not want to miss this one! Then as usual the BASIC programming class will be meeting, the disk library will be open as well as Adolph Butler with the cassette library. Programs are continously being added to the disk and cassette library and are available FREE of charge to members of the group. We have programs available for everyone, even those who just have a cassette recorder and the console. Furthermore, many of the programs that we have are not cheap programs but FREEWARE and Public Domain programs of high quality. Books, magazines and schematics on the TI are also available from Adolph Butler and our group mail is available for reading at the meetings as well. We receive quite a few newsletters from other groups across the country as well as a bunch of other mail... See you there...

Gary Cox

SHOPPERS CORNER

South Jersey Computers, P.O. Box 5, National Park, N.J. 08063 has the MBX Expansion System (voice recognition system) and the baseball cartridge for $40.95 + $3 shipping. If interested call (609) 848-5963 or write.

Arvies Office Supply on Union Ave has boxes of 2500 sheets of microperf paper at a good price.

Games "N" Gadgets in the Mall of Memphis still has some cartridges available.

Dillards at Poplar Plaza has 2 TI Disk Controlers ($99) and 1 TI Disk Drive ($79) for sale. If interested see Don Clarke in the electronics department. (Note a PE Box is still needed for the controler and disk drive.)

Also check the for sale table at the meetings as it is always full of items dirt cheep which are usually not mentioned in the newsletter. This is one reason to attend the meetings.

If you have something you are looking to buy or sell drop us a note and we will try to put it in here FREE of charge to members...

Larry Hamel has a Foundation 128 card with DSR and Ramdisk installed for $99 call him at 872-4742

Radio Shack has TI Modulators for sale for approx. $5 you might get a backup while they are availablle

Gary Cox

TICOFF

The following is a brief report of the TICOFF sent to us from Christopher Morgano in Mineola, New York.

T.I.C.O.F.F. short for Texas Instruments Computer Owners Fun Festival was held Saturday March 15, 1985 at Roselle Park High School. This fair was of special interest to me because of the different vendors and lectures. Some of the attending vendors were: Texaments, Quality 99 Software, Myarc, also were assorted local user groups with demonstrations. The lectures were great. Chris Faherty of Inscebot had a lecture on Myarc XB II - Bitmap Graphics. He talked about interfacing Ti-Artist pictures using XB-II and the 128K card. Allows programs to be created with Ti-Artist and loaded directly in XB. Explined were some graphics functions of XB-II and functions of Ti-Artist.

There were other lectures which I did not attend. Some of them were: TI-99/4A DIRECT ACCES TO HARDWARE DEVICES, Paul Charlton, ADVANCED PROGRAMMING TECHNIQUES AND EXPERIENCE WITH THE NEW MYARC BASIC, Al Walkowiak, COMPUTER SIMULATION AND MODELING, Jay Holovacas, FORTH, Dr. David Jagerman, and of course Lou Phillips of MYARC demonstrating XB-II and his new computer. The MYARC demo was the best. I was amazed by the speed of XB-II. It performs all of the same features as TI XB, execution up to three times faster, 40 character display text mode, windowing, and the best part Hi-Resolution graphics. You now can make superb graphics with the following commands: CALL MARGIN, CALL POINT, CALL POINTSTAT, CALL DRAWTO, CALL WRITE, CALL GRAPHICS, and many more. Also when you want to load a program from TI XB you would type RUN "DSK1.LOAD". Now you could type RUN DSK1.LOAD or RUN LOAD.

Unfortunately I was not able to see the new MYARC computer because we had to leave NJ early in order to beat the traffic in NY. But I did see the shell of th computer. All I can say is that it was gray and looked like a PC. I really wish I could have seen this marvelous piece of work demonstrated.

I hope there will be more fairs like the TICOFF and hope it is held next year.

** Christopher Morgano **
TITEX Users Group Long Island, New York

PILGRIMS PRIDE

Pilgria's Pride of Hatboro, Pennsylvania, was anticipating the release of a new product, unnamed as of press time, for the TI99/4A.

The product, a module and disk package tenatively priced between $60 and $70, is said to allow the user to load almost any

cartridge made for the TI99/4A onto a disk and run it through the module (allowing the user to run all the cartridges through the one module).

According to the manufacturer, the product expands the user's system by 8K and provides an Editor/Assembler loader package (load and run, run program files and print program files).

With the 128K or 512K RAM card, the product is said to allow assembly programs to use all memory as directly programmable, giving the user a true 126 or 520K computer. It is said to allow the user with a single keystroke to run any program file from any drive and page through all files on all disks. Users may load up to seven programs in memory at one time and execute any of them with a single keystroke, according to the manufacturer. Upon completion (or resstting the Widget reset button) of that program the user will be returned to the main menu and will be immediately ready to run any other resident program.

According to Pilgrim's Pride, also comming soon is a 136/520K Assembler/Loader package, with the assembler/loader transparent to pages in memory, which includes the following macro instruction routines: Move blocks of data to and from RAM, ROM, VDP RAM, etc.; store several screens; page screens at will; and scroll screens in all four directions (up, down, left, right).

Pilgrim's Pride is located at 5 Williams Lane, Hatboro, PA 19040. Phone is (215) 441-4262 or the new toll free order line, 1-800-TI-STUFF.

From MICROpendium March 1986 issue

XB TI-WRITER DISCOVERY

While experimenting with the Extended BASIC TI-Writer loader (in our library) that came from Austria I discovered that the utility option has a feature which will allow the loading of some Assembly Language programs that prevously required the Editor/Assembler cartridge! Here are the steps in loading an assembly language program with the TI-Writer loader:

1. Select number 3 on the menu (Utility).

2. Type in the device and file name for the assembly program.

3. Select graphics load (number 2 on menu).

The program should now load and automatically run. However, there is one catch, this loader will only load certain assembly language programs. The only way to find out if it will load a particular assembly language program is to just try it. If an error occurs then the loader will not load it. One program I found that the utility loader would load was the new disk manager program we have in our library (not DM 1000 it loads from XB anyway.). This utility option on the XB TI-Writer loader is handy if you do not have the Editor/Assembler cartridge and you wish to run an assembly language program that will not load in Extended BASIC.

Gary Cox

CHEEP MODEM

Well it's April and I like many of you have been looking for a way to communicate computer-to-computer without spending a bundle. Well I've found an article in this month's RADIO-ELECTRONICS that tells you how to build a short haul modem for next to nothing and it doesn't require the PE box.

The operation of the modem is quite straightforward. The output from the computer's serial port is fed to two amplifiers—a straight-through one and an inverting one, and coupled from each to a small transducer. The transducers have different tones and correspond to the logic highs and lows that are output by the serial port.

Both transducers are mounted inside a resonating chamber, which is connected by a flexible conductor to a similar resonator at the receiving computer. An audio receiver or other suitable pickup is mounted in that resonator and connected through a pair of 567 tone decoders to that computer's serial port.

The electronics part of this modem is really elementary, and the circuits can be found in most any project book. However, I plan to demonstrate a working modem at this month's meeting. I'll be happy to answer any questions you may have at that time. The real secret of the modem is in the resonators and in the selection of the correct flexible conductor. Both rigid and semirigid resonators have been tried, and each type has its own advantages. Semirigid resonators are usually more efficient than the rigid, but are not as durable. They are, however, easier to work with, and for that reason may be preferred.

The fexible conductor is perhaps the most important part of the modem. A number of materials were evaluated, among them wirewrap wire, UHF hard line, and even a slinky. The last worked well, but was found to be prone to interference from ambient noise, which led to transmission errors. In the end, the most effective in terms of its price/performance ratio was found to be dental floss. Dental floss is also easy to knot, and a good knot is vital to the proper performance of this modem.

A maximum reiable transmission rate of 125 baud was achieved in my prototype. While higher speeds are obtainable, some slight error is introduced (you can reconize what is being transmitted) without losing any real data that is needed. Given the price you really can't argue. Many thanks to the magazine and its' writer Lapri Dolf for the article CheapModem.

APRIL FOOLS!!!!!!!

Richard Hiller

QUESTION OF THE MONTH

Has anyone using the SG10 printer had a problem with underlining while using the formatter. Any help would be appreciated, call 743-6781.

EDITORS NOTE: If you have any questions or problems, a group solution will be better than one persons futility.....

Poke into the brain of your printer with TI WRITER

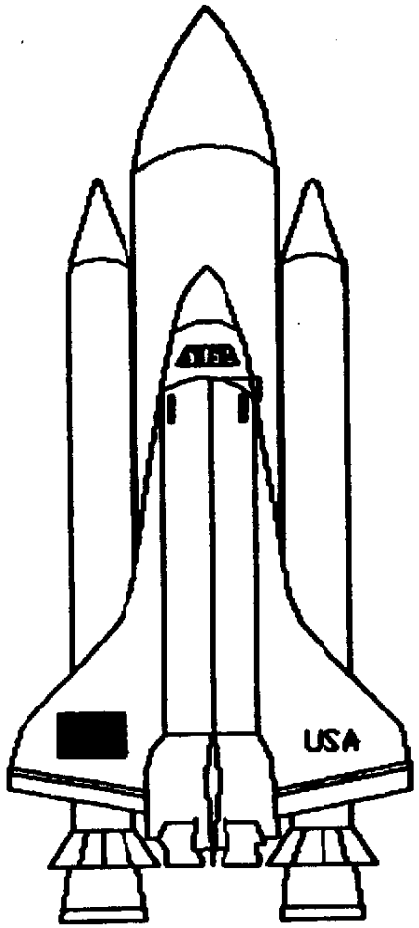
ASCII 0	CTRL U SHIFT 2	NULL
ASCII 1	CTRL U SHIFT A	
ASCII 2	CTRL U SHIFT B	MID SOUTH 99 USERS GROUP
ASCII 3	CTRL U SHIFT C	
ASCII 4	CTRL U SHIFT D	, Mk's SWOPE
ASCII 5	CTRL U SHIFT E	
ASCII 6	CTRL U SHIFT F	
ASCII 7	CTRL U SHIFT G	BELL
ASCII 8	CTRL U SHIFT H	
ASCII 9	CTRL U SHIFT I	
ASCII 10	CTRL U SHIFT J	LINE FEED
ASCII 11	CTRL U SHIFT K	
ASCII 12	CTRL U SHIFT L	
ASCII 13	CTRL U SHIFT M	CARRIAGE RETURN
ASCII 14	CTRL U SHIFT N	DOUBLE WIDTH
ASCII 15	CTRL U SHIFT O	COMPRESSED
ASCII 16	CTRL U SHIFT P	
ASCII 17	CTRL U SHIFT Q	
ASCII 18	CTRL U SHIFT R	KILL COMPRESS0
ASCII 19	CTRL U SHIFT S	
ASCII 20	CTRL U SHIFT T	CANCEL DOUBLE
ASCII 21	CTRL U SHIFT U	
ASCII 22	CTRL U SHIFT V	
ASCII 23	CTRL U SHIFT W	
ASCII 24	CTRL U SHIFT X	
ASCII 25	CTRL U SHIFT Y	
ASCII 26	CTRL U SHIFT Z	
ASCII 27	CTRL U FCTN R	ESC ESCAPE
ASCII 28	CTRL U FCTN Z	
ASCII 29	CTRL U FCTN T	
ASCII 30	CTRL U SHIFT 6	
ASCII 31	CTRL U FCTN U	

THE FOLLOWING ARE ESCAPE CODES ...NOTE, SOME NUMBERS IN THE CODE SEQUENCE ARE ASCII NUMBERS NOT THE NUMBERS IN ASCII....
SUBSTITUTE CTRL U FCTN R IN EACH INSTANCE OF ESC.

ESC 4	␛4	INITIATE ITALICS (NOTE 1)
ESC 5	␛5	CANCELS ITALICS MODE
ESC E	␛E	EMPHISIZED PRINT MODE
ESC F	␛F	CANCELS EMPHISIZED PRINT
ESC G	␛G	DOUBLE STRIKE MODE
ESC H	␛H	CANCELS DOUBLE STRIKE
ESC-1	␛-1	STARTS UNDERLINING
ESC-0	␛-0	CANCELS UNDERLINING
ESC >	␛>	SETS BLOCK GRAPHIC (NOTE 1)
ESC =	␛=	RETURNS TO NORMAL CHARSET
ESC B 1	␛B1	SETS 10 CPI
ESC B 2	␛B2	SETS 12 CPI
ESC B 3	␛B3	SETS 17 CPI
ESC S 0	␛S0	SUPERSCRIPT MODE
ESC S 1	␛S1	SUBSCRIPT MODE
ESC * 0	␛*0	D/L CHRS INTO REDEFINABLE RAM
ESC * 1	␛*1	INITIATES REDEFINABLE CHARACTER
ESC $ 1	␛$1	CLOSES REDEFINED CHARACTER CODE
	␛$1S0?0(0D0~0(␛$1	WHERE "S0" IS THE CHARACTER "S" REDEFINED TO 0 AND NOT DEFINED AS A DECENDER, SEE CH 8 GEMINI MANUAL.

NOTE 1: MAY NOT WORK IN REDEFINABLE RAM

FROM THE SANCTUST KEEPER



TO THOSE WHO CLIMB ABOARD
THEIR FIREY STEEDS AND SLIP
THE BONDS OF EARTH TO TOUCH
THE HAND OF GOD...
WE WILL FOREVER REMEMBER YOU
GOD SPEED. CHALLENGER
GOD SPEED.

Francis Scobee
Commander

Ellison Onizuka
Lieutenant Colonel

Gregory Jarvis
Payload Specialist

Judith Resnik
Research Scientist

Ronald McNair
Research Scientist

Michael Smith
Pilot

Christa McAuliffe
Payload Specialist

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CALENDAR

MEETINGS: April 17, May 15.June 19(third Thursday!)
WORKSHOPS: April 26, May 24.June 28

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