
 * FROM THE EDITOR'S CONSOLE *

I ran right home from the meeting last week and put my most-passionately-used newsletter programs and files on one of my new LAVENDER disks. I LOVE 'EM!

I also love the new Panasonic KX-P1124 printer. One of the most fun things I've been able to do is feed it envelopes using Roger Wilson's ENVELOPE/ADDRESS program which I now have on my Horizon Ram Disk. The memo loader feature which takes single sheets and envelopes and loads them ready to type on line 2 is SO-O-O-O-O nice and easy. When I want the paper higher, just press the line feed, don't have to take it off-line.

Didn't Mark do a terrific demo of the Cryptographer's Assistant! I wanted to buy a disk and there weren't any. The Word Search will be very useful this year. Now if I could just find a program that makes and prints out crossword puzzles. Anybody know of one or want to write one for me????

Robert, both consoles are working great!!! Thank you. I'm using the one with the 16-bit processor for the newsletter.

Word of the lightning strike that hit the DEPOT was BAD NEWS! WHAT CAN WE DO TO HELP?

Now, I'll take a shot at catching you up on most of the new software and hardware with the help of Gary Cox, et al. I found out last night at the Board meeting that I'm the Education Chairperson.

Version 3.0 of TI BASE is now available. Many enhancements and time saving abilities added. Owners of previous versions may upgrade for \$14.94 plus \$3 shipping. Those who purchased TI BASE after 3/31/90 can obtain free upgrade (plus \$3 shipping). For the free upgrade, be sure to include your sales receipt and both disks, other upgrades just return both disks.

Texaments is offering group discounts thru 7/30/90. TI BASE v3.0 \$19.95, TI ARTIST+ \$19.95, Artoons \$10.95, The Missing Link \$20.95, Guidelines for TI BASE \$6.95 and \$2 off TI BASE applications. Let Don know if you're interested in ordering.

Artoons, 3-disk set of precision drawings off favorite cartoon characters...The Simpsons, Peanuts Gang, Far Side, Muppets, etc. Over 50 drawings for TI Artist users. \$12.95 plus \$2.50 shipping from Texaments, 53 Center Street, Patchogue, NY 11772.

Rave 99 has new Expansion Chassis designed to use existing TI or Geneve PEB cards and disk drives. A 200 watt power supply, slots for 8 cards, and has a power switch, keylock, turbo switch, power LED, hard disk LED, and Turbo LED. Model PE/2A replaces the original TI PEB (\$275), and Model PE/2B has additional space to install the TI motherboard in the chassis (\$325). Shipping \$12.50 on each. Rave (203) 871-7824.

A memorial disk of Bill Knecht's music includes 63 songs of Religious, Christmas, and popular songs with graphics. \$10 per set formatted as needed (SS/SD, DS/SD, DS/DD). Proceeds to purchase hymnals for the church where Bill was a member. Mail donations (\$10) to his father, Henry Knecht, 3309 Flamborough, Pasadena, TX 77503 (713) 473-8870.

Harrison Software has a new disk of music out, "Mozart Serenade" for \$6. Harrison Software, 5705 40th Place, Hyattsville, MD 20781. Specify DSSD or SSSD "flippy".

Jim Peterson has released new Tigercub programs not

listed in the TI-PD catalog. Send \$1 to Jim Peterson, Tigercub Software, 156 Collingwood Ave, Columbus, OH 43213 requesting the latest TI-PD catalog and supplement #8.

Wm. A. Shores, 5737 Glendale Dr., Pockport, NY 14094 has out an Extended BASIC Module Expander, which gives you XB and 5 other selections all in one. Hardware kit \$25 + \$3 shipping. Limited to modules with 16-pin groms. Check out module expander from Gary Bowser, Oasis Pensive Abacutors, 432 Jarvis Street, Suite 502, Toronto, Ontario, Canada M4Y 2H3 before you buy either expander.

LGMA Products, 5618 AppleButter Hill Rd., Coopersburg, PA 18036 (new address), has 99Fortran and 9640 Fortran.

The June 1990 Tidbits NL from Mid South 99 UG has extensive reviews by Bill Gaskill on The Missing Link (TML) and TI BASE v3.0. The Missing Link, written by EZ-KEYS author, Harry Wilhelm, is an assembly language program that gives XB users and programmers access to the 4A's bit-mapped graphics display mode. A/L programmers gained access to this mode with the E/A module, but it has not been directly accessible to XB programmers until now. It is possible now to write programs in XB that display the same kind of detail and graphics that appear in programs like Parsec or Munchman. \$24.95 + \$2.50 S/H from Texaments.

Congratulations, Marshal Ellis for your winning phrase -- "T.I. stands for Technical Interface."

From the 2nd Regional TI 99/4A User Meeting in Berlin comes news of a new XB Compiler which translates XB programs into E/A programs. Also out is a program called MEMORY MANAGER which promises to be very useful.

PLUS! v2.0 is out with updated programs, tutorials, templates, and manual of utilities and word processing. \$10 from: Jack Sughrue, Box 459, East Douglas MA 01516.

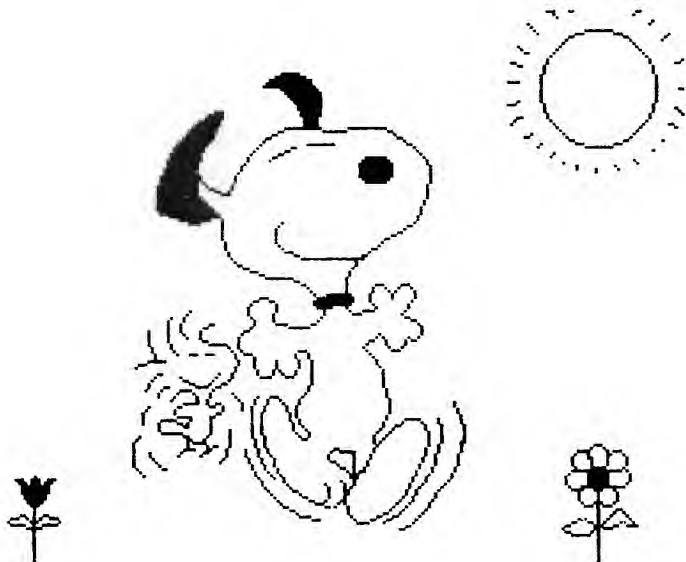
MULTIPLAN v4.0 is an update by R A Green which includes:

1. Almost a 50% reduction in run time.
2. Patches documented for default filenames.
3. Slight change in entering default disk, so as to accomodate hard disk users.
4. A MP Startup loader for RAM Disk or hard disk users.
5. Patch documented for setting screen colors.

Review by Audrey Bucher in PUG Peripheral 5/90 and WP NL 6/90. Order from RAG Software, R A Green, 1032 Chantenay Dr., Cloucester, Ontario, Canada K1C 2K9. This is fairware and no price is listed in the review, but you be sure and send your fair share. (Mary Phillips)

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- Mailing. Von Barker 417-865-0810
- BBS:
- TI DEPOT (24 hours)
 Curt Finney, Sysop 417-865-0810
- TI AND IBM CONNECTION (NOW 24 hours)
 Bob Osterloh, Sysop 417-886-5993



 * OZARK 99er USER GROUP MINUTES *
 * JUNE 14, 1990 REGULAR MEETING *

The June '90 Regular Meeting at the Trinity Lutheran Church was called to order at 7:35 PM by Pres. Curt Finney, with 19 members and 2 guests present. Larry Carter and former member Jim Applequist were introduced.

SECRETARY : Minutes were voice vote approved as published in the NL.

TREASURER : Don Barr reported a 5/10/90 beginning balance of \$582.19; Income of \$70.25; Expenses of \$29.12; 6/14/90 operating balance of \$623.32. Issued a draft for \$50.97 to Charles Rinehart in reimbursement for purchase of 250 once used disks. \$57.00 was turned over to Barr for on-the-spot sales of 190 disks \$3/10.

LIBRARY : Piper absent. No report. Rinehart left MicroPendium disk and remaining new disks with Curtis to avoid delay on the next DOM.

NEWSLETTER : Mary still needs your articles and reviews to share thru the NL. Next issue will be a "joint" June-July NL with a repeat 2-month issue for Aug-Sept. Mary presented "I LOVE MY TI" pins (she calls them her "love pats") to Robert Gabriel and Clyde Heldenbrand Jr. Congratulations to the recipients! The lady is always so thoughtful of others that she falls easy prey to people like Charles Roberts who presented her with a box of special floppy disks--LAVENDER, yet! We look forward to something extra special on these passion-ate colored media. Mary deserves recognition from all for her dedication and hard work in behalf of the group as well as for the vital management of the Newsletter production crew!

OLD BUS : Mary explained some of the capabilities of the newly acquired PANASONIC KX-P1124 24-pin printer. This unit will make our newsletter look "uptown professional". Curtis reminded the membership that the entries in the "LETTERHEAD/LOGO" contest must be turned in at the August meeting.

NEW BUS : Tom Bingham will demo TIBBS from Genie at one of the future meetings. Curtis suggested we have a family picnic before fall with good food and fellowship away from regular meetings. Some supportive comments, discussion. More later.

PROGRAM : Mark McCarty gave a masterful and interesting review of "CRYPTOGRAPHY" a disk with several word games and puzzles. June DOM was sold to those desiring the newly released Horizon Ramdisk Operating System V8.1 and 8.3. AL:O:FN : 9:10 PM

Respectfully; C. R. Rinehart, Secretary

 ** BBS ETIQUETTE **
 ** (or How to Spend Your Summer Vacation) **
 ** By Curtis Finney **

A great deal has been said about the virtues of using a modem, however, very few people have addressed the problems involved in actually logging on or even what is expected of the user while online. This text will attempt to answer some of the more frequently asked questions, and make your first few logons more enjoyable both for you and the SysOp.

In order to make this text a little more generic (and shorter) I am going to assume that you already have your terminal emulator software loaded, a working modem attached to your phone line, and a bbs online.

The first pitfall you may encounter is garbage on the screen, if there is readable information in the garbage then the problem is phone line noise, try to find out if the problem is on your end or the bbs's. Do this by either picking up the phone and listening for noise after you have dialed a working phone number, or calling another bbs and watching for the same garbage. If when you call out voice on your telephone you hear other people talking in the background or static, then don't bother calling a bbs until you have had your phone line repaired. Most SysOps are quick to discover noise on their end of the line so it will probably turn out to be on your end. When you call mother bell to report a problem with your phone do not tell them that you're using a modem on that line, just tell them that you occasionally have to much static (or other people talking) to hear the party you called. You will find that being firm, not rude will work with them (almost) every time.

The other category of garbage is the completely unreadable screen, this will be solved by either knowing a little about the bbs you're calling or knowing a little more about your software, or both. Start by finding out the data byte requirements of the bbs you are calling. Most of the bbs's you call will require 8 data bits, no parity, and 1 stop bit. Most SysOps lists of bbs's will include this information. The other thing to check is your baud rate, if you logon a bbs that will only run 1200 baud, calling at 2400 will cause the same symptom.

I realize that getting logged on doesn't have much to do with etiquette, however, keeping a SysOp happy what this is all about and logging on without making too many mistakes will go a long way towards that end.

WELCOME TO MY BBS
 3/12/24 baud
 SysOp: Me
 CoSysOp: Him

Finally, a title screen. The title screen is an introduction to the bbs, your first glimpse of who runs it what it's called and maybe even a little information about it. Note also, the CoSysOp, this is the other guy you have to watch out for, he will generally have as much authority as the SysOp, with about half the patience (grin).

The next screen or few will be logon information, or if it is your first time online you will be submitted to a battery of questions ranging from your real name and phone number to the health of your maiden aunt. The reason for these questions is not because the SysOp is a nosy old goat, it's because he has made a commitment to serve his users and the better he knows you the better able he is to make you comfortable on his bbs, so answer these questions truthfully. Most SysOps will not use what you say against you, so if you refuse to answer a question, leave the SysOp a note explaining why.

The password you use to logon will reflect on you in the same way that the answers to those nosy questions did, also, there are unscrupulous people that will use your password, and access to say things they would never say with their own, so be cautious with your password, keep it easy enough to remember but different enough to make it hard to guess, and never use the same password on two different bbs's.

Now we should be at the main menu, if this is your first time online, and because of those unscrupulous people I spoke of earlier you probably will not have access to all the places you will want to go in the bbs. The proper thing to do at this point is to find the information files and look through them. If there are a lot of them or if you are pressed for time then log them to your printer or disk. Whichever way you find more convenient. Don't forget to READ them. The SysOp has gone to the trouble of writing these files to tell you what he expects of you while online, and the author of the software has written them to help you get around in his program, either way your failure to look for and read these files is considered a slap in the face to the SysOp, further, to ask a question of the SysOp that has been answered in these files is like teaching a pig to sing, it wastes your time, and annoys the pig.

Your first time online you may or may not have full access to the message base, at your first opportunity leave the SysOp a short message thanking him for access. You should have a chance to leave feedback to the system before logging off, save your questions for then.

Chat mode is a feature allowing you and the SysOp to type messages to each other in real time, meaning that if the SysOp is there and wishes to, he can suspend the actions of the bbs and type on your screen, as you can his. Don't abuse this feature, if you have a legitimate need to tell the SysOp something right now, then by all means hit that C key otherwise leave him a message. The protocol here is similar to two way radio, it's ok to leave out words to quicken the exchange but keep it readable, also, it is easy to mistake a pause for thought as the end of a sequence, wait for the person typing to send two or more carriage returns, this indicates the end of typing in the same way the word "over" is used on the two way radio.

File transfers, probably the leading cause of lackofaccessitis in bbsing today--not to mention one of my biggest pet peeves. If you don't read anything else in the information files look at the SysOp's rules for downloading files, I can't think of another area in a bbs where people lose their access more often or get badmouthed as quickly. Here's the thing I don't understand, Joe SysOp spends a great deal of either money or time and makes a download section second only to Comuserve, then creates a maze of restrictions consisting of time limits, upload to download ratios, baudrate limits and user access level limits so that almost no one can get a file. Generally, if you haven't been spending all your time downloading from a bbs and leave a message once in a while, you can get a SysOp to give you more time or change your ratio, or adjust your level, or whatever it is he needs to do to let you get that file you want, but ask him nicely, and walk lightly

in the transfers section, a SysOp foaming at the mouth is not a pretty sight.

The message base is another place where you need to know the rules, call five different boards and you will get six different sets of rules. The policy statement in the information section will probably spell out what you can and can't do there.

Another thing to watch for here is the command that saves edits or previews your message, there is no standard set of commands for the editor so make a note or two about how to get around in the software.

By now you should have slid past most of the obvious mistakes inherent in bbsing, don't worry that you missed out, there are still plenty of places to get in trouble, like for instance, online games. If the only reason you log on is to play the games (or download files), you might find yourself without enough access to get to them. The easiest way to make sure you don't get your access cut or eliminated is to not put the SysOp in the position where he feels he is being taken advantage of, never mind that he put the games up to play, (or the files up to download) just remember to leave a message once in a while, or upload a file when you have one and your SysOp should stay a happy camper.

If you don't understand a policy or can't find a help file concerning a problem, don't hesitate to ask the SysOp, or for that matter leaving a message to "ALL" will get you answers when you need them. My experience has been that the unasked questions cause more grief than the answered ones, and even a frothy-mouthed SysOp is better than no SysOp at all.

The last thing I will address myself to in this article is logging off. When you are leaving a bbs do it right, there will be a command at the main menu that will let you out (and probably a hot key that will allow a fast logoff from almost any menu). Hanging up on a bbs is rude and in some cases will gag your access or some other part of the bbs.

I'll put a few definition here to help keep you out of the dictionary. (See what great guys SysOps are!)

BBS (Bulletin Board System) Remote operated computer.

MODEM (MODulator-DEMulator) That thing the salesman said you couldn't live without, it came with the software you'd like to.

LOGON (LOGON) The act of using a modem to access a bbs (Aren't you glad I did those other two first?).

SYSTOP (SYSTEM OPERATOR) The owner (operator?) of a bbs system.

BYTE Unit of measure in computerese.

BIT What you get a lot of if you drop a byte.

BAUD This is either what sis spends hours looking in a mirror at or a unit of measure for a modem.

COSYSOP (CO SYSTEM OPERATOR) A young, immature, or cold sysop.

USER See sis's mirror.

LACKOFACCESSITIS (LACK-OF-ACCESS-ITIS) When sis hides her mirror.

HOT KEY What you use to get into the car when the lock is froze.

LOGOFF (click)

 *
 * RECIPE WRITER/GOURMET CORNER *
 * by Bill Berendts *
 *

Summertime is nigh and full-time kitchen cooking is a drag! Try these casseroles for easy preparation and one dish cooking. Great for pot-lucks suppers, church suppers or just eating at home. Hope y'all like them.

CHICKEN-WILD RICE CASSEROLE
 375 degree oven
 CHICKEN, WILD RICE, RICE, CASSEROLE

- 1 pkg (6 oz) long grain & wild rice mix
- 3 TBSP plus 1 tsp cornstarch
- 1 tsp salt (optional)
- 1 dash of black pepper
- 1 can (12 oz) evaporated skim milk
- 12 oz chicken broth
- 2 TBSP butter
- .25 C chopped onion
- 5 C. cooked & cubed chicken
- .25 C. chopped pimento
- .25 C. chopped parsley

Cook rice per package directions, omitting butter. Set aside. In a saucepan, mix the cornstarch, salt & pepper, gradually stirring in milk & broth 'til smooth. Add butter & onion. Bring to a boil over medium heat, stir constantly. Cook 1 minute or 'til mixture thickens.

In a 2 quart casserole, combine the sauce, chicken, pimento, parsley and cooked rice.

Bake, uncovered, for 30 minutes.

YIELD: 6-8 servings

CRUNCHY TOP HAM/POTATO CASSEROLE
 350 degree oven
 CASSEROLE, HAM, POTATO, CRUNCH

- 2 lb. Southern style frozen hash brown potatoes, thawed
- 1 can (10-3/4 oz) cream of chicken soup, undiluted
- .5 C. butter, melted
- 2 C. dairy sour cream
- 2 C. cubed cooked ham
- .5 tsp ground pepper
- .33 C. chopped green onion
- 1.5 C. shredded cheddar cheese

TOPPING:

- 2 C. crushed cornflakes
- .25 C. melted butter

Combine all casserole ingredients and mix well. Place in 13" X 9" X 2" baking dish.

Combine topping ingredients and sprinkle on casserole.

Bake for 1 hour

YIELD: 10 servings

MICROWAVE PIZZA CASSEROLE
 Microwave oven
 MICROWAVE, PIZZA, CASSEROLE

- 1 lb ground beef
- .5 C. chopped onion
- .5 C. chopped green pepper
- 1 can (16 oz) pizza sauce
- 1 can (4 oz) sliced mushrooms
- 4 oz sliced pepperoni
- .5 tsp salt (optional)
- 2 C. uncooked noodles
- 1.5 C. water
- .5 tsp each--oregano, garlic powder, and crushed basil leaves
- .75 C. shredded mozzarella cheese

Microwave the ground beef in a 2 quart casserole of 3-1/2 minutes; stir and microwave another 2-12 minutes or 'til cooked. Drain thoroughly. Add all the remaining ingredients EXCEPT cheese. Mix well. Cook on HIGH for 17 minutes, stirring twice during cooking. Sprinkle cheese over casserole; cook 1 minute on HIGH until cheese is melted.

YIELD: 6-8 servings

TUNA-CHIP CASSEROLE
 325 degree oven
 TUNA, CHIPS, CASSEROLE

- 1 bag (7 oz) plain potato chips
- 1 can (19 oz) asparagus tips, drained or
- 10 oz frozen asparagus tips, pre-cooked for 3 minutes and drained
- 1 can (7 oz) water-packed tuna, drained

SAUCE:

- .66 C evaporated milk
- 1 TBSP lemon juice
- .25 tsp dry mustard
- .125 tsp white pepper

TOPPING:

- .25 C shredded cheddar cheese
- .5 C sliced almonds

Crush chips and place HALF in greased 10" X 8" X 2" baking dish. Arrange tuna over chips & top with asparagus. Cover with remaining chips.

Combine sauce ingredients and pour over all. Sprinkle with cheese and then almonds.

Bake 20-25 minutes; remove from oven and let stand 5 minutes before serving.

YIELD: 6 servings

 ** TI BBS NEWS **
 ** by Tom Bingaman **

 ** REMEMBRANCE: Marches **
 ** from the period of the American Revolution **

We didn't make it last month so here is a update to last month column that didn't make it. The bad weather has finnaly did in the depot after a bunch of years without major down time. Lightning took out almost the whole system and will be another week before all has been repaired or replaced. We don't realize how much we need and use it till it gone. Thanks this time to having the File Connection as a backup will help till we get it back. We (I) want to take this space to "Thank" Curt and Curtis for all the year of service to the TI User group and for all there work and help, if we can help please let us know.

(LAST MONTHS LEFTOVERS)

Well when it rains it pours and it sure has been doing that this month. Thru it all the BBS have stayed up and are running fine. Bob has changed the name and software on his board to File Connection as he has more types on it now and is on 24 hrs a day. The Depot has made it thru it all with very little down time and the messages are over 900 now. we have a few new things on the BBS and a few old TIers from the past have dropped by the board. The City has a BBS now with information about what is going on in the city government and other events. You can only leave messages to the sysop on it at this time. fit may lead to a good input for all in the future. Phone # are 864-1840, 864-1841, 864-1842, 864-1843, 864-1844,864-1845, 864-1846 and 864-1847.

The are a couple of IBM files that convert TI DV80 files for use with a Clone and one that converts an IBM file to a TI DV80 with an xmodem header. The first is TITEXT.COM, and the second is TIDV80.EXE and should be on the File Conection.

Ed Johnson is working on the digitizer idea that Steve Langguth worked on before he left the club and has two pictures on Genie, file #3849. Steve was on the Depot and wants to sell his ImageWise video digitizer that he built when he was working with the TI.

A few files on the depot:

- 9T9/APRIL 140 IF128
- ARTPIC-ARC 141 IF128
- BUNNY-ARC 78 IF128
- RANGER P 25 PROGO
- tlx312-2 48 DF128
- ARC/F-MAT 78 IF128
- ARC-LABEL 86 IF128
- BILL/STST 98 IF128
- CALENDER 178 IF128
- CALLINK#1 166 IF128
- CALLINK#2 158 IF128
- CHARA1FIX 24 PROG5610
- CLOCK/MBP 12 DV80
- QBASE 58 IF128
- SMALLTALK 216 IF128

Please call the File Connection and check out there fine TI file section and Message base. There is a new list of files on Genie and a Demo from Asgar and Comic show program, Smalltalk and Q-base. Worth you effort....Tom

No.	File Name	Type	Author
3879	HIRES-XB-SCREENDUMP	X ED.	JOHNSON
	Desc: Hires XB Screen Dump		
3878	FIXRANDISK REVISION 4	X J.	WHITE
	Desc: Fixes internal Ramdisk prob.		
3877	DIFF_ARC	X C.	PULLEY
	Desc: text file comparison program.		

This "concert" was in part inspired by a local Washington D.C. composer named Richard Bales. His cantata called "The Republic" contains settings of music from the revolutionary war period as well as original compositions of his own.

The idea here was to present marches from that period in as close to their original form as we could get. Our resident musician went to the Library of Congress, and from their microfilm was able to obtain original scores for many of the marches in this set. Most of them are simply unknown today. Our original intent was to include marches from all countries represented in the war, including Germany, France, Great Britain, and of course the United States. Unfortunately, nothing from Germany in that period could be obtained. We have included British and French works, as many as we could find.

Many of the American marches were scored for only fife and drum, so we've "fleshed them out" with additional instruments where possible. No drum part was indicated in the scores, so our musician "improvised" that part. The arrangement of "God Save the Queen" used in this set is from a 1763 setting by Johann Christian Bach. The arrangement of "George Washington's March" here is based upon the one used by Richard Bales. The "Marcia in G" was probably composed originally as a true military march, but the only extant printed score is that version used in Christian Bach's opera "La Clemenza di Scipione" in 1778, and our rendition is from that source. We regret that most of the composers remain anonymous, as we'd like to give them credit for their work.

You'll notice that many of these have dedications on the screen. Some are of course to well-known historical figures, some are to friends in the TI User community, while others are to people you may never have heard of. Several are dedicated to members of the French Noailles family. These were the in-laws of Le Marquis de la Fayette. They were instrumental in supporting the American cause with supplies and money before the Treaty between France and the United States made such support legal. Our musician even dedicated one number to our head programmer. He blushes when that plays.

We sincerely hope you'll get many hours of listening pleasure from our marches. If that happens, all the effort will be worth while to us.

Editor's note: The above is the DV 80 file on Harrison Software's disk which will be our doorprize in July. We have received three of their disks which are very unique, as well as a catalog which includes the following disks. SSSD, DSSD, or flippy. Need to state.

Johann Sebastian Bach:
 Anna Magdalena's Notebook, Two-Part Inventions, Three-part Inventions, and Goldberg Variations. \$5 ea.

Johann Christian Bach:
 Opus V, Opus XVII Each of these disks contains six complete sonatas. \$8 each.

Peter Ilyich Tchaikovsky:
 The Nutcracker Suite (\$5)

Mozart and family:
 Wolfy at 8 \$5, Mozart Serenade \$6, and Mannerl's Notebook (\$5).

Potpourri-Music of the Baroque, Galante, and Classical Periods (Handel, PUrcell, Beethoven, etc.) \$5

This music is written in AL, needs XB, 32K & disk drive.

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** PRINTERS #1 by John F. Willforth **
** Via 9/89 PUG      ML = More Later **
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I will not say how far I'll go with this series on printers, only that when NO ONE finds strategically placed ERRORS, I'll assume that either no one cares, or I've lost you all.

I must start out at the beginning. The printer is probably the most common and useful device for a computer. You can do without a disk (you could store all in memory), and you could do without a modem (some of you could never imagine how), you can even do without a monitor, I've seen people do it. But to take away the printer would be akin to taking away the brush, paint, and canvas from Picasso. Almost nothing that is input to a computer from keyboard, modem, disk, or even a cassette serves a useful purpose unless a "HARDCOPY" of the re-designed, sorted, aligned, deleted, added to, or otherwise corrupted data is created. Even the act of writing the initial program that does all of the above is made easy by making a listing of that program as it develops (a frequent aid in debugging). I know that initially, even more than a disk, I desired a printer.

A printer generally is like me. It takes orders, but can only let you know if it is getting behind in it's work, is hungry, or has died (so maybe this is the only way for both of us to be missed). A printer is generally a RO (Read Only) device. There are those with keyboards, but those are generally used as hardcopy master consoles on commercial computers so that the business will have a paper trail of all actions taken by the system manager and operators on the system. I would have a very hard time identifying system problems if a CRT terminal was used as a master console. The printer is generally interfaced to the CPU through either a SERIAL (RS232) or PARALLEL interface and cable. The TI 99/4 and /4A using a PEB RS232/PIO card can drive either interface. The old TI interface was first the TP (we won't discuss here), and then the dual RS232 Stand-alone. I know that a limited number of them were produced, and that some companies like CORCOMP, MYARC, BOX CAR and others produced a variety of cards for this purpose.

The printer receives the data to print if it is READY:

- * ON-LINE and POWERed up.
- * The printer buffer (if it has one) is NOT FULL. The printer will usually print slower than data will be sent. Today's printers usually have 1K, 2K, 4K, 6K, 8K or even larger BUFFERS within themselves to allow data to flow at a faster rate to the printer than can actually be printed. ML
- * NOT OUT OF PAPER!

The printer can only let the CPU know when it is behind in it's work, or out of paper in a serial printer hooked to the RS232 port. This is accomplished with a HARDWARE BUSY signal from the printer CTS (Clear to Send) pin 5 to DTS (Data Set Ready) pin 20 on the RS232/PIO card. In other words, when the printer cannot accept any more control or data from the CPU, logic in the printer changes CTS to NOT CTS. This in turn is INPUT to the RS232/PIO card as NOT DTR, and the flow of data stops until the printer catches up (just by printing one line), having the new paper installed, or the OFF/ON LINE status changed to ON LINE (READY). These three conditions are NORMAL and occur often even when you don't think about it.

If the printer is PIO (the most common), all of the above conditions apply, but the method is slightly different. When the printer is BUSY it OUTPUTS a signal on pin 11 (BUSY) [High at +5v.] more directly NOT GROUND to the PIO port on the RS232/PIO card pin called

HANDSHAKE IN. The flow of data will be stopped.

If you do not have the cable for the SERIAL or PARALLEL (PIO) printer made as it should be to control data flow, you may print a page or two but eventually characters of data or control will be lost.

Since TI didn't like convention, they made TRANSMIT on the SERIAL port, pin 3. RECEIVE must therefore be pin 2. When you hook up RS232 ports on other types of equipment, you usually have to cross pins, i.e.: 2 to 3 and 3 to 2 so the mouth of one speaks to the ear of the other and vice-versa. Not TI! No! Pin 2 goes to pin 2 and pin 3 goes to pin 3. On the parallel port to the RS232-PIO card, they did even more dirt. They chose a 16-pin connector that is so rare that GOD threw away the pattern. But, the signals that do arrive there are acceptable to the PIO convention. The only real problem here is with STROBE (the signal that tells the printer when to look at the right dat lines for a good character), and polarity appears to be the major problem, the problem lying with a few printers, not TI. In case you didn't know it, the PARALLEL (PIO) interface sends to the printer much faster than SERIAL (RS232) because the entire 8-bit byte of data appears at the printer in one time frame, while it is spelled out one bit at a time to the printer in the SERIAL mode.

As you can tell, I'm dealing with the interface cables for your printer this month. If you can't get the printer to run on your TI, then you won't be able to keep up. Below are two cable configurations that should work, and cause the flow of data between your TI and the printer to be smooth and complete. REMEMBER, there are printers that will; give you trouble because of "NON-STANDARD" (whatever that means) protocol, strobe or data polarity, timing, etc.

The SERIAL (RS232/1) Cable:

	TI end	Printer end
GROUND	7	7
REC DATA	2	2
TRANS DATA	3	3
DTR	20	5

The SERIAL (RS232/2) Cable:

	TI end	Printer end
GROUND	7	7
REC DATA	14	2
TRANS DATA	DATA 16	3
DTR	19	5

The PARALLEL (PIO) Cable

	TI end	Printer end
STROBE	1	1
DATA 0	2	2
DATA 1	3	3
DATA 2	4	4
DATA 3	5	5
DATA 4	6	6
DATA 5	7	7
DATA 6	8	8
DATA 7	9	9
READY	10	11
GROUND	16	16

(optional) ground 19 thru 30

If you can't get your printer to run with one of the cables indicated above, I can give you some suggestions, but I won't be reprinting any special cables in this series.

In PRINTERS #2 we'll start with the commands that are sent to printers to make them do what they do. This is one of the most inter- resting things that we'll get into in this series. This therefore will not be a hardware only series. I wanted to get into printers because this is the one peripheral that every one of you can make perform, and to do it takes some understanding of hardware, but even more understanding of printer commands.

PS: The Parallel interface on the TI RS232/ PIO Card is BI-DIRECTIONAL. This is signifi- cant for those of you who are looking for a high speed INPUT/OUTPUT port for the TI. You just have to control the reading of this PIO port. Maybe you can find something in the Editor Assembler manual on this. Why not look into it? ML

** TWO DOMS IN JULY **

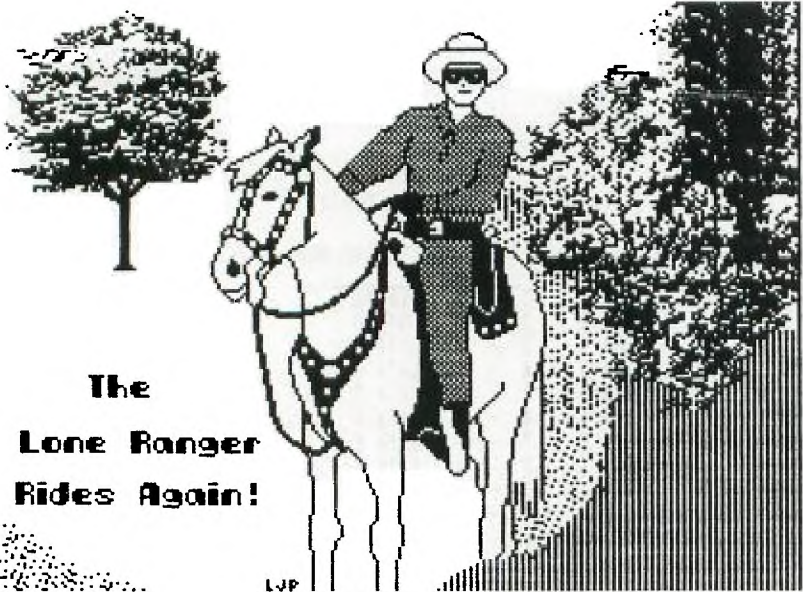
#1 CRYPTOGRAPHER'S AIDE which Mark McCarty reviewed in the April ML and demoed at the June meeting.

#2 John Birdwell's DISKU v4.2 which Roger Fortner is going to demo at the July meeting.

A new procedure will be tried this month for determining the winner to the free DOM. Instead of the slip of paper in the envelope, the announcement will be in the *Readme file on the disk. Remember, you will need to bring your "evidence" (disk) to the meeting when you collect.

The June DOM was ROS v8.1 for ram disk or stand-alone. Certain members are going to lean on Curtis to put a HRD in the club PEBox and SHOW us the new features!!!!

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The
Lone Ranger
Rides Again!

LVP