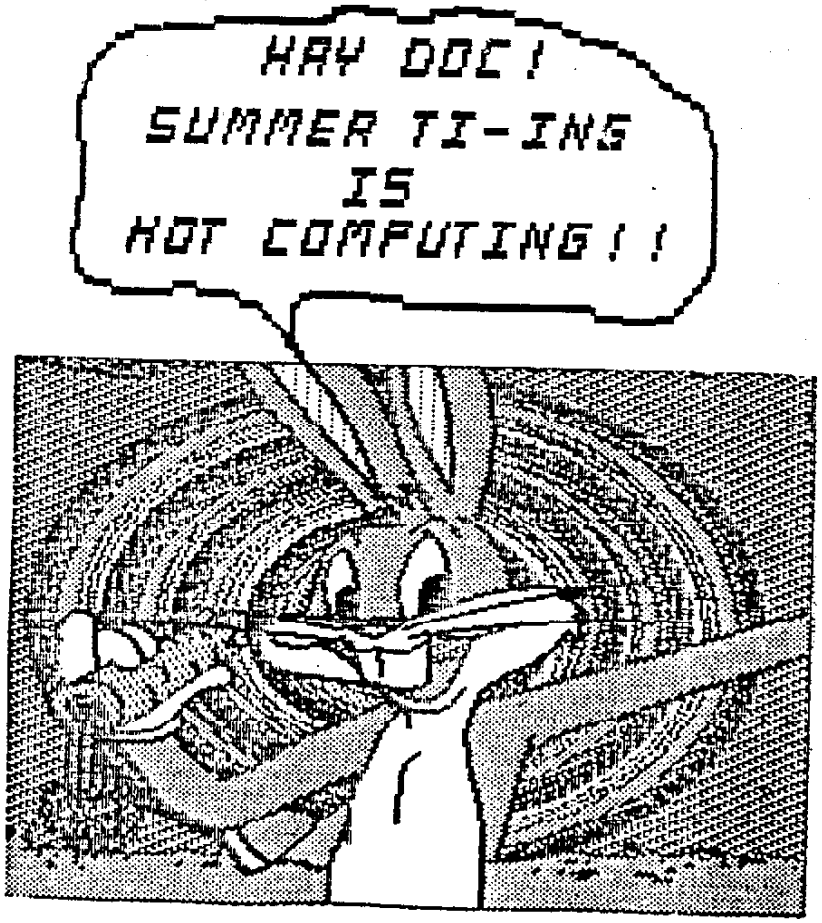
TI-D-BITS

PHILADELPHIA AREA USERS GROUP NEWSLETTER
COVERING THE TI99/4A
AND MYARC 9640 COMPUTERS

JUNE/JULY 1988



THE PHILADELPHIA AREA TI-99/4A USERS' GROUP (JUNE-JULY '88)

The Philadelphia Area TI-99/4A Users' Group meets twice a month. On the first Saturday of any given month, we meet at the Bucks County Youth Development Center, (YDC, which is next to Neshaminy Mall), Administration Building, beginning at 10:00 am. On the third Saturday of each month, we meet at LaSalle University, 20th Olney, in room H-329 located in the Science Building. Membership to The Philadelphia Area TI-99/4A Users' Group is available to all. We invite anyone that is interested in the TI-99/4A to visit us. Stop in and see what is available to you for your TI and how membership can benefit you!

Current executive board consists of:

PRESIDENT.....	Don Arsenault.....	215-368-0446
VICE PRESIDENT.....	Allan Silversteen.	215-885-7910
SECRETARY.....	Mark Wannop.....	609-365-1776
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EDUCATION	Barry Traver	
	Frank Passini	
	Ted Cheney	
	Tim Coyne	
	Carlo Angelico	
EQUIPMENT	Rice Hall	
PROGRAM	Dr. Eric Bray	

REMEMBER to be considerate when calling any of the above people. Limit your calls to the early evening hours. (6pm to 9pm)

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Classified ads are printed in blocks. A block consists of 3 lines, 55 characters wide, or any increment of 3 lines. Classified advertising is accepted from members at NO CHARGE for a one block ad, per issue. Additional ads from members may be placed at cost of $1.00 per block. Non-members may place classified ads at a cost of $2.00 per block. All advertisements MUST be paid for in advance.

Commercial advertising is accepted for publication at the following rates:

Quarter page	$ 5.00
Half page	$ 8.00
Full page	$15.00

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The editor of TI-d-Bits or the executive board of The Philadelphia area TI-99/4a Users' Group reserve the right to reject any material submitted for publication for any reasons.

The Philadelphia Area TI-99/4A Users' Group's program library is available to all active members at NO CHARGE for copying to your disk. A charge of $2.00 per disk is made for club supplied disks for members. Non members may obtain copies of the library for a fee of $5.00 per disk. A catalog of the library's contents is given to all new members upon request and updates will appear in this publication from time to time. To obtain material from the library, contact the librarian for the best procedure to obtain your requests.

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SECRETARY'S NOTES
June 1988
By P. Mark Wannop
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MAY MEETING NOTES

NEW YDC CLASSES ANNOUNCED

An ongoing workshop in PRINTER'S APPRENTICE will be given at YDC by Ron McKeever. PRINTER'S APPRENTICE is a "desktop publishing" program, written in Forth, that runs on the TI; the complexity of the program led to the creation of the workshop. It is scheduled at 11:45.

Mike Riccio is back with us during the summer, and will be giving a three month "GENEVE overview", scheduled at 10:00.

Ted Cheney's MICROSOFT MULTIPLAN class will begin at 9:45 until about noon; this is also an ongoing session.

"YDC" classes are held on the first Saturday of the month at the Bucks County Youth Development Center adjacent to Neshaminy Mall.

OTHER ANNOUNCEMENTS

Frank Passini has kindly donated a thermal printer to our SIG; thanks, Frank!

Poster designs are still needed to promote our club! There are a lot of TI owners out there who are not in user groups who are unaware of all the advances in the "TI world" since TI discontinued the machine! (How do I know this? Well, several people in the South Jersey Apple User Group know folks with TIs who are not aware of ANY TI group in the area...) One way to reach new members is to take advantage of bulletin boards in supermarkets, schools, and so on. The member who submits the design chosen will win a box of printer paper!

It was announced that PILGRIMS' PRIDE is closing it's retail store but will continue as a mail-order concern. The store was one of the last local sources of TI related material; however, the nature of the business became more mail oriented over the past year and no longer requires the overhead of a retail store. While TI supplies will not be kept in stock, they will be ordered and shipped on request.

Much of the software from Pilgrims' Pride is now in our SIG's hands; the public domain material will be added to our library, and the commercial software will be offered for sale at reasonable prices.

Pilgrims' Pride also set up vendor tables outside of our meeting room, and many attractive bargains were being offered!

TURBO PASCAL 99

Mike Riccio, back from Carnegie-Mellon University, gave a demonstration of Turbo Pascal 99. This program, imported from Germany, adds yet another language to the TI. To run the program on the TI requires the memory expansion, at least one drive, and the TI Editor/Assembler; it will run on the Geneve with a slight fix to the code, which Mike has worked out. Unlike TI's UCSD Pascal, you do NOT need the P-Code card.

Programs are written according to normal Pascal syntax, and then compiled with the Turbo Pascal 99 package; the resulting source code is then assembled with E/A. The last step is to use the Turbo Pascal linker. The resulting program runs extremely fast, much faster than BASIC.

Mike did comment that Turbo Pascal 99 was not as full an implementation as the older USCD Pascal, and recommended that those who have them hang on to their P-Codes cards!

The program is distributed by Texaments; the program itself is in English, but some of the other material was still in German.

(I did note in an English newsletter, "International TI Lines" from the ITUG, the following:

"Stephen Shaw has written to advise me that Texaments are not, and have apparently never been (despite their advertising) in a position to supply Turbo Pascal 99. It is likely that they will NEVER be in a position to do so."

"Stephen says that Turbo Pascal 99 was written by an Austrian software house and the rights are now held by a German software company. It cannot be purchased in the USA, Canada, Australia, France, or the UK."

The comments close with an appeal for "someone who can translate German"; I honestly don't know what the bottom line is here - I just pass it on...)

PC TRANSFER FROM GENIAL COMPUTERWARE

Don Arsenault demonstrated PC TRANSFER, a program that allows the transfer of MS-DOS ASCII files from an MS-DOS 360K disk to a TI formatted disk, and back again. Unlike some previous programs, you do NOT need an MS-DOS machine on the premises to do this; what you DO need is a TI or Geneve with either a Myarc or Corcomp disk controller (the TI card does not provide double density, and cannot

handle a 360K disk) and two double sided double density drives.

When the program is loaded, one drive is designated "MS-DOS" and the other "TI"; the "MS-DOS" drive will read ASCII files from IBM compatible machines. In fact, the "MS-DOS" drive will format MS-DOS disks.

There are three options in the program. The "TI director" will convert MS-DOS ASCII files to TI D/V 80 files used by TI-Writer or Funnelweb. The "MS-DOS director" converts files the other way. The third option formats MS-DOS disks.

The program operates easily and quickly, and allows easy transfer of text files between our machines and those we use at work or those of friends.

PRIZES, ETC...

The sign-in drawing was not held this meeting; there will be a multiple drawing next time. The 50/50 was won be Allan Silversteen.

PLATO REVISITED

At noon we were visited by members of the Computers In Education SIG; Dr. Eric Bray demonstrated the PLATO system from Control Data Corporation. There was some lively debate about the program's level of interaction and reward to the student.

Personally, I like PLATO; however, there are other programs available for the TI that may hold the limited attention span of TV-reared youngsters. These programs are available through Tenex, and are published by KidWare and other houses. TI itself, along with Scott-Forsmann and other houses, put out a wide array of educational modules heavy on graphics and sound; many of these are still available.

I must admit that when I was in school it was pre-computer; our learning materials, except for the occasional 16mm film with lousy sound, were printed on paper and had to be read. Our tests were also on paper, and nothing sang, danced, or played tunes when we answered correctly. Our reward was the grade we earned when the teacher returned the test the next day. Despite these stone-age techniques, we all graduated knowing how to read and write...

I have some "educational" programs for my other machines; one, for the Apple, features a rotating field of letters and a magician. When the letters stop moving, the user presses the corresponding key and the magician "zaps" the letter. This is supposed to teach us to type... Sorry, gang, it's a nice game, but that's all it is.

Many PLATO programs provide expository material explaining the subject, following with questions on that material; the user can review the text if necessary. In this way, the program tests the user's reading comprehension as well as his knowledge of the subject. To me, this seems a tad more educational than the more game-like programs.

However, it all comes down to personal opinion; what works for one person may not do it for another. You pays your money and you takes your choice...

NOTES FROM HERE AND THERE

TWO TERRIFIC GRAPHICS PROGRAMS!

Here's a couple of nifty programs in the PATIUG library that I picked up at the last meeting.

TASS 2001

Here is a nice slide-show program for TI-Artist files written by Gary Bowser. This is a copyrighted fairware program with a registration fee of $15.00.

Documentation is included on the disk, and should be printed through the PrintFile (PF) function of the TI-Writer EDITOR. If printed through the Formatter the page registration will be off. The footer indicates 7 pages of docs, but this is not so; there are two different page 6's... Also there are 2 additional pages on converting an Atari Touch Pad to TASS use.

How does the program work? Very well! It has some interesting programming. It requires memory expansion, disk, and either XBASIC, E/A, TI-Writer, or one of the various Supercarts. It supports Myarc Horizon Ramdisks. Further releases will support hard drives. It does NOT support "Gram" devices such as the Gram-Kracker; to run this with a G-K, one must turn Gram 0, Gram 1-2, and Loader to the off (down) positions.

After the title screen, you are given a startup screen. You enter the order of drives you want to access; the program supports more drives than most humans are likely to have... Incidently, if you specify a drive 0, you'll get a "lines" demo for awhile! Next you can enter a "Save filename" if you want to save a displayed slide to disk. Why? Read on, MacDuff...

You are then asked for "Print Devicename"; unlike most programs, this one does not support Epson/Gemini printers - instead, it supports the Canon PJ-1080A, the Tandy CGP-220, and other color - yes, I said color - printers.

Finally, you get to the disk delay table. Set the delay

for each drive you use, leave 00 in those you don't have.

The program will start running a slide-show when you press FCTN 5; a chart is in the docs that shows the various functions.

However, the program is more than a slide-show; you can also flip the picture left to right, or up down. Then you can save your flipped picture to disk (which is why the Save filename) or print it out. I don't know if there's a color heat-transfer ribbon available, but if there is, this would be one reason to print a flipped picture. When you save a picture to disk the File Savename is auto-incremented, so you don't have to worry about changing it.

Although a "Zoom" function is listed, it is not operational yet; it is promised for a future release.

I noticed a problem loading pictures with color in them; when the color information loads, the black and white portion goes all black. I could be doing something wrong, so if anyone successfully loads color, please enlighten the rest of us!

The program will run from the Joystick port provided you assemble a 12 key touch pad to use with it; plans to convert an Atari model are provided.

This is a nice program!

PICASSO PUBLISHER

And this is another nice program!

Picasso runs with XB, E/A, or Mini Memory, Memory expansion, disk, Epson compatible printer, and joystick

Picasso is a very flexible art and text program, allowing some low-level "desktop publishing". The available art area is larger than the screen; that is, the screen is a "window" to the total area. This is very similar to JoyPaint in both function and picture area.

The program has a wide variety of "brushes" and "textures" with which one can compose pictures; you can, for example, easily "paint" a brick wall or roof shingles. It has many functions common to art programs, such as circle, box, lines, rays, and so on. Like JoyPaint, it does not support color; as you cannot see the entire picture at one time, both these programs are printout oriented. Further, it has flexible text input in a variety of fonts. Ten fonts are included, and you can create and save more.

Now here is where this one stands out: the File Utility Menu.

You can load up to 42 lines of up to 60 characters wide from a previously written TI-Writer file. It comes up in the font that is currently loaded in the program.

You can load a TI-Artist file. It is placed in the area currently windowed by your screen. If you want to change, you can "undo" it.

You can load a TI Artist file so that it overlays something already on the screen. No "undo" on this one, so save your picture before you do this...

Catalog disk will allow you to find the correct file...

Also included on the disk are other programs: DISKPRINT will print a Picasso file from disk straight to the printer without having to load Picasso. XBFONTS gives examples to save XB chars into Picasso fonts, load Picasso fonts into XB, and creating Picasso files from XB. MACDMP/O lets you change BITMAC files to a compatible format.

This is also copyright Fairware, written by Arto Heino of New South Wales, Australia; he requests $20.00; it's worth more!

Is it "desktop publishing"? Well, it won't match a MacIntosh with a meg or so of memory, coupled with a laser printer, but how many of us have a spare $4000.00 to spend on that hardware? Furthermore, the software to run that equipment costs a tad more than 20 bucks too... With Picasso, you get a program that mixes text and graphics with a nice measure of flexibility. Two Picasso screens, when printed, comprise one 8-1/2 by 11 inch page. This one belongs in your graphics program library!

One picture is worth a whole lot of words; turn to page 10 of this newsletter and you will find a Picasso screen reproduced between the Cryptoimeric and the mailing area.

THE GRAMULATOR!

No, this is NOT Arnold Schwartzenegger's latest film... Instead, this is a device very similar to the Gram-Kracker! Available from CaDD Electronics, 52 Audubon Road, Haverhill, MA 01830 (617) 372-0336 (after 6:30 pm EST), it has most of the G-K's functions and some possible improvements.

According to their press release, shown to me by John Simpkins, The Gramulator simulates 64K of GRAM and 16K of RAM (in two 8K banks at >6000 - >7FFF) and offers the option of 32K (in four 8K banks at the same location) to accommodate MBX cartridges.

(The MBX system was a voice recognition game unit made by Milton Bradley for the TI; cartridges ranged from pre-school to adult. There were about 12 titles made.)

Like the G-K, this will dump ALL TI, Atarisoft, Parker Bros., etc. cartridges to disk, and in addition, with the option, MBX cartridges as well. Also like the G-K, it will emulate a supercart. It is claimed to be able to run Myarc's XBII.

You can customize GROM 0, 1, or 2, and load user written GPL code. It has a total of 80K (96K with MBX option) of memory with lithium battery backup; the battery is located OUTSIDE the case. The saved files (except MBX) will load into the G-K or the Myarc Geneve. The operating software for the unit is built-in; a memory editor, supplied on disk, allows you to alter and save any program loaded into the unit. Documentation and technical information is included.

Memory expansion and disk is required to use the Gramulator. It does not make coffee, so do not pour water into it...

I haven't seen the unit, except for a glance at the prototype at TICOFF; it appears to do all the functions of the Gram-Kracker with these few differences:

1) The MBX option.
2) Battery outside the case.
3) Memory editor on disk, rather than built in.
4) Probably most important, it is currently available.

The 80K unit sells for $180.00; information on the MBX option will be available for user installation, or can be ordered at time of purchase for an additional $50.00 (in Massachusettes, add $9.00 and $2.50 respectively for sales tax).

Write or call (after 6:30 pm) for further information.

HOW'S THAT AGAIN???

Some folks were a tad confused by the article on page 10 of May's 99+ Express newsletter (which I edit for Deptford's 99+ Express users group), entitled "New Product News"; despite the line "above by Karl Schuneman, Port Huron Michigan, with tongue planted firmly in cheek!", I was asked several times (by some surprising people) where and when a "TMS-9999/BS" chip could be had! The opcodes listed for the - ahem - BS chip included: ADGB - ADD GARBAGE; JOT - JUMP OFF TABLE; CRN - CONVERT TO ROMAN NUMERALS; and ETOY - EMULATE COMMODORE 64...

It was a joke...

HANG IN THERE....

SECRETARY'S NOTES
JULY 1988
By P. Mark Wannop

(The first part of this probably won't make it in the July DATA BUS, as I missed the deadline, which was unusually short this month... It will be caught up in August's DATA BUS.)

JUNE MEETING NOTES

DSDD disk controller cards purchased from Myarc were distributed to those who had ordered them.

PACS BBS DEMONSTRATED

Steve Weissman, SysOp of the PACS MULTI-SIG BBS came to the meeting to explain the many advantages of the board, and how to use them. He was assisted by Eric Bray, who used a typical BBS session saved to disk. This way, all the features of the BBS could be shown and discussed without having to hassle over having phone lines in the room.

Steve discussed getting a user account, and how to initialize the BBS by sending a "break" character (this sets the program's baud rate; for 300 baud, one would "break" twice).

The electronic Mail system was shown. This enables any PACS account holder to send a PRIVATE message to any other account holder. This also enables one to send messages to computer users all over the world. New users are suggested to leave a message to themselves so that they may familiarize themselves with how the system operates.

The forum list was discussed, with a visit to the TI-99/4A AND GENEVE 9640 forum. Most forums are open to all PACS members with only a couple of exceptions. (Upload/download privileges may be restricted by some, but I've found that if you identify yourself to the forum's SysOp and explain that you have a compatible computer to that forum - assuming you do, otherwise U/D would be useless - they will extend the courtesy to you.)

Most forums are set up the same way; using the TI/GENEVE as an example, the public message bases were discussed. This enables the user to post a message readable by anyone using the forum - useful for group announcements, purchases, tips, and so on. The forum message base is easy to use, and follows the same protocol as the Private Mail section; once you learn one, you learn them all. The BBS indicates the number of the last message in the forum, and the last message the individual has read. The

user can "jump" to any message he cares to read. The Scan feature can be valuable for finding messages aimed at the individual's interest.

Uploading and downloading were discussed next. You may U/D both binary (program) files and ASCII (text) files. There is a choice of binary transfer protocols, such as XMODEM and KERMIT. Programs must be U/D'ed by binary transfer; text can be U/D'ed by either binary or ASCII. Steve indicated that binary might be better even for text, although I've had more success with ASCII for text upload.

There are five U/D areas available to the forum. This allows the types of programs (utility, game, graphic, etc.) to be separated. One section of the TI/GENEVE forum, for example, is set aside for GENEVE files, which will not run on the TI-99; the user then knows whether or not the file will be useful to him. One feature of the TI forum's file section is the GIF pictures, which are changed daily. (Incidently, GIF is a universal graphic format. Unfortunately at present there is no GIF for the TI, but it can be used on the GENEVE. GIF files from ANY computer can be downloaded to any other computer that can run a GIF program, regardless of manufacture or operating system.)

Also discussed were UUCP and USENET, two interesting and exciting ways of communicating world-wide! The PACS BBS ties in with the UUCP system, which ties into other systems throughout the country and around the world, communicating with mainframe, mini, and micro computers owned by corporations, educational institutions and individuals. This makes it possible to communicate with anyone who ties into the net, provided you have a routing address for him or her. To do this you use the private Mail section of the BBS. How do you find out someone's "address"? Well, you have to know who you want to contact, and have them give it to you (as Mike Riccio did a few months ago) or you can get it from articles on USENET.

USENET is a collection of literally hundreds of articles written by users throughout the world, constantly being updated (typically, over 1 MEGABYTE of new stuff daily). These articles are of varying levels of sophistication, some quite technical. There are over 300 areas in which articles may be found called "newsgroups". When you first enter USENET, you have a "subscription" to all 300+ areas. You can then prune your subscription list down to only those areas that interest you by "unsubscribing" those you don't want to read. Note that this is NEWSGROUPS, not articles. Think of a newsgroup as a print magazine on the newstand; you might want to pick up, say, Micropendium, Science Digest, Astronomy, Newsweek, and Sports Illustrated; you might not want to get Tiger Beat, Hot Rod, or Doll World. Well, you have access to everything on the "newstand" until you do some "unsubscribing"!

However, there is an advantage over the print magazine - you can respond directly to the author of the article by sending a private message to his "address" given on his or her article.

With USENET, the PACS BBS has literally put a world of information at our fingertips.

"G" - THE GRAPHICS PROGRAMMING LANGUAGE

Eric Bray briefly showed a new graphics oriented programming language for the TI and Geneve. The program comes to us from Adelaide, South Australia.

G is loaded in using option 5 of the editor/assembler using the filename DSK1.GEE. The program loads in a language resembling BASIC, but with overtones of LOGO and FORTH. From the title screen you are given five options: (L)oad, (S)ave, (I)nit, (E)dit, (R)un. LOAD both loads the program from disk and runs it. SAVE will save a program to disk or "save" it to another device, such as a printer. INIT clears memory pointers and restarts the program; like Extended BASIC, it attempts to load and run a program from disk, in this case called GLOAD. EDIT puts you into an editor similar to the TI-Writer editor, except it does not window. RUN runs the program...

The programming structure is similar to BASIC on the TI, except that it does not use line numbers. GOTOs and GOSUBs are labeled, similar to Subprograms in Extended BASIC; this is also similar to the way TI LOGO is set up.

There are several demo programs on the disk. One gives four demo screens; "stars", "lines", "snail", and "circles". Each produces a high-res graphic not obtainable easily through BASIC. Another program animates the title screen and then loads in the program just described, illustrating that programs may be chained. There are also small sample programs in the documentation. Incidently, the documentation is ample to get someone versed in BASIC started. Hopefully, some tutorials on G will appear in the future.

This program allows the user to create high-res graphics screens from a BASIC-like language without resorting to assembly language or LOGO; if you are interested in graphics, this may be a nice addition to your software library.

BREAKAWAY ON THE GENEVE

Mike Riccio demonstrated a version of Breakaway that he re-wrote to run on the Geneve. The program is an adaptation of the old game "Breakout", written to run on the TI. It would not run properly on the Geneve, and Mike found it difficult to play with joysticks. Mike disassembled the program, fixed it so it would run on the Geneve, and added routines to use the Myarc Mouse with it. The result is a program that runs well, and is much easier to control, using the mouse rather than joystick.

ONE LAST TIME - THE POSTER CONTEST!!!

The July meeting is the DREADED DEADLINE for the poster contest. We want to attract new members for our SIG, and want a new poster design; design one, and if it's chosen, win a box of printer paper. Design the poster with any means you want - TI Artist, Joypaint, Picasso, even (gasp) freehand!

HAM N' CHIPS IN AUGUST

August brings the annual PACS HAM N' CHIPS festival. What's that, you say? Well, it's sort of a mini "Trenton" fest, a flea market at which all of us can find bargains on new and used computer equipment and supplies. The PATIUG (PACS TI SIG) will have a table this year; members are encouraged to bring their unneeded equipment to sell. In addition, there will be many vendors available. This will take the place of the regular August meeting, so come on out and do some bargain hunting!

NOTES FROM HERE AND THERE

GRAPHICS, LOGOS, AND COPYRIGHTS

In the June issue of 99+ Express (Deptford TI group's newsletter), I went on a bit about the use of cartoon characters, company names and logos, and other things in newsletters, and the casual violation of copyright that often goes on when these things are used. In a nutshell, EVERY character that appears in a comic strip, comic book, or animated cartoon is a copyrighted property that is owned by somebody. Similarly, company names, logos, and "distinctive designs" are owned by that company.

This is true regardless of how the image is produced. I've seen cartoons clipped from a newspaper appearing in various newsletters; this is usually a clear violation of copyright, as the producers of the newsletter often do not obtain reprint permission from the copyright holder. What you may not realize is that a TI-Artist or CSGD image or other computer generated image (or freehand drawing, for that matter) of a copyrighted character will violate that copyright if that image is printed!

This might seem trivial, but consider the cartoon cat "Garfield"; there are literally hundreds of commercial products, from stuffed toys to greeting cards featuring this fat feline. And from every doll, card, and paperweight in Garfield's image nets a few cents for artist Jim Davis and the syndicate that distributes the cartoon; needless to say, this adds up to big bucks. If a copyright is lost, the licensing value is lost also. If the visual image of Garfield was to slip into Public Domain, then anyone could make "Garfield" products and not pay a cent in royalties.

It is very easy to lose copyright when an image, tradename, or other property becomes commonly used by the public without proper copyright notice. For example, "aspirin" was a copyright name owned by the Bayer company; however, the public applied it to the same product of other companies and Bayer did not take notice until it was too late. This almost happened with other companies; "Kleenex" is still used by many to mean a paper tissue, and the manufacturer almost lost copyright to the name. Eastman Kodak had a similar problem in the early part of the century, when the public took to refering to ANY small camera as a "Kodak."

There is a way around the problem, which seems to satisfy all parties. When comic book collecting became a semi-organized hobby, "fanzines" started to appear; naturally, they wanted to illustrate their articles on the characters with illustrations. After a bit of working out, the general agreement is that a character can be reproduced as an illustration, provided proper copyright notice accompanies the illustration. Therefore, we can brighten up our copy with Garfield, but we should acknowledge his owner...

This, incidently, applies to the very name and logo of our computer; "Texas Instruments", "TI-99/4A", "Solid State Software" and the texas outline with "TI" superimposed logo are all copyrighted. And believe me, a company like Texas Instruments does care about its copyrights!

Shortly after I wrote my piece in the 99+ Express, I attended a board meeting for the South Jersey Apple Users Group; we were all handed a copy of a letter that Apple sent out to all user groups registered with them, concerning this very subject. Apple gently but firmly pointed out that "Apple", "MacIntosh", the Apple logo, and about a dozen other phrases were all copyrighted, and that such should be noted in each and every newsletter, thank you very much... They went on to say that this could be done in one blurb on the page that lists club officers, meetings, etc.

I mention this mainly to alert anyone who plans on doing any "desktop publishing". Copyright should be respected;

it's easier to stick a copyright notice on a graphic than to answer a summons...

COMPUTER MODULES COME TO CAMERAS

As computer technology becomes more and more minaturized, many products become far more "intelligent" than their predecessors. Nowhere is this more true than in the field of 35mm. photography. Just a few years ago all the top 35mm SLRs were largely manual devices. One set shutter speed, ASA, and aperture manually. One certainly had to focus manually. In fact, a light meter built into the camera was considered high-tech, and there were those who resisted even that...

Most current SLR cameras have the capacity to set speed and/or aperture according to information from built-in metering, often with a variety of "programs" to choose from. The ASA is automatically set by sensors that "read" information on the film canister. Many cameras even focus themselves.

Although there were a few previous autofocusing SLRs, the Minolta Maxxum was the first truely successful autofocus SLR. Minolta has recently upgraded the line, and their new top-of-the-line unit has a feature that is in common with many small computers, including the TI-99/4A, Commodore 64, Atari, and COCO - computer modules, or "rompacks".

Minolta's Maxxum 7000i was written up in July's MODERN PHOTOGRAPHY; I'm glad I have some background in computers, otherwise I'd have been almost unable to follow the article. (And this was just an overview article - the test report will be published later!) Without going into too much detail, the camera is reported to have the fastest autofocus available, and the electronics do everything except hire the model. Exposure, focus, and flash systems are all interconnected through several microcontrollers to "achieve an amazing amount of precision and choice." There are so many various metering modes on this camera that I was frankly confused by the time I'd finished the article; I also had the impression that the author was a tad overwhelmed as well. For more info, check the magazine...

The feature that interests me is that the camera can be programmed, just like the TI, by plugging in rompacks. There are ten postage stamp sized "computer cards" that slip into a slot on the camera. Each one optimizes the camera's electronics with a program to perform a specific photographic function (close-up, portrature, bracketing, et al). The program label is visible in a window on the right side of the camera. The computer cards will have a suggested list of about $50 per card (Yes, that's $500 list for the set of ten.) The article didn't mention a list price on the camera...

CRT SCREENS: THE EYES HAVE IT...

TI-D-BITS recently published an article on eyestrain and CRTs (computer monitors); as I'm working in an ophthalmologist's office, I'd like to add a few comments from a pamphlet entitled "Facts & Fiction", published by the Scheie Eye Institute:

"Can reading in dim light or watching television too closely harm the eyes?"

"No. These are common misconceptions. Reading in dim light does not harm the eyes. The eye focuses light as a camera does. Dimness of light or closeness of an object will not harm the eyes any more than taking a photograph in dim light or close up can harm a camera."

"Holding books close or sitting close to the television is very common among children. This will not harm their eyes and usually is not a sign of nearsightedness."

"Can extended or concentrated use harm the eyes? What about computers?"

"No. Using your eyes a lot cannot harm the health of your eyes. Even if you think you use your eyes more than most people, the fact is that all people use their eyes whenever they are open. So, a proofreader or computer operator doesn't use his eyes any more than a daydreamer."

"If your eyes are tired from a lot of reading, or if you get headaches, this is most likely from muscle tension, squinting, or furrowing your eyebrows."

Therefore, so-called eye strain is usually facial muscle strain; obviously, a poor quality display will promote squinting, so use a correctly operating TV or monitor with your TI. TI-Writer and other programs offer a variety of foreground/background combinations. I like black on white (or white on black on some monitors) and many people like white on blue; the important thing is that the combination as appealing to the user and creates no annoying visual interference on the screen. As the previous article stated, when you feel tired from any reading, either on paper or screen, take a short break, have a look around, say hello to the wife and kids or whatever for about 10 minutes.

THE PHILADELPHIA AREA TI-99/4A USERS' GROUP (JUNE-JULY '88)

THE CRYPTOLIMERICK...

Last time's

There once was a sad little guy
Who stifled a sad little cry
"Oh, why," he'd deplore
"Did I go Commodore?"
"I wish I had bought a TI!"

KA KEYFDK AKEFW PKE KAW BHP DMYZBFM

CFMF BKLHAT K WMHAV CHZB FKXB YZXFM

HA ZBF EHWPZ YR ZBFHM UJKRRHAT

ZBFI PSQHZ ZBFHM PHWFP QKJTBHAT

KAW FKXB YR ZBFE AYC HP K EYZBFM

Hang In There...

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PRESIDENT'S COLUMN
By Don Arsenault
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The annual PACS HAM and CHIPS event this year, on August 20th in the LaSalle parking lot, should prove to be interesting for all us TI'ers. We will have a booth (or table, or whatever) this year with a lot of TI software for sale. As you may or may not know, PILGRIM'S PRIDE in Hathoro has closed their retail store and will continue to operate as a mail order company. We were fortunate to be able to acquire most of the programs from them for the TI club. We will be offering the commercial programs for sale at greatly reduced prices at our booth. Most of the items are one only, so come out early to get the best pick.

At our booth we intend to have an operating system for display and for copying programs from our library, which has also been greatly expanded by the public domain and fairware programs from PILGRIM'S PRIDE. The booth will be available to all members to display and sell any items that they may have for sale. We hope to have a good selection of hardware, software, and documentation there. SO COME ON OUT AND JOIN THE FUN!

As some of you may have noticed at the July meeting, we have acquired a new monitor for use with the club systems. It is an amber monitor, capable of 80 columns which can be used on both our TI system and our GENEVE. All of the club's equipment is available for your use at the technical sessions held at YDC, so come on out to the YDC sessions and get some hands on experience with the new equipment.

Due to the LABOR DAY holiday weekend, the September YDC meeting will be held on the second Saturday in September (SEPTEMBER 10th) instead of the first Saturday. The Printer's Apprentice Workshop is being held on every other Tuesday night at YDC starting at 7:30 PM. The first evening session was held on July 26th and was sparsely attended, probably because of the big rainstorm that night. The sessions are scheduled for August 9th and 23rd, September 6th and 20th, October 4th and 18th, and so on. Ron McKeever is conducting these classes and this is a good opportunity for everyone to get acquainted with this good "desktop publishing" package.

Please remember our **POSTER CONTEST** !! So far we have received only 2 entries. Let's get some more posters so that we can select one to be used for advertising our club. Bring your posters to the HAM and CHIPS festival and give them to anyone at the TI booth. I know that there are quite a few latent artists in our group, so make up a poster to be included in the competition.

At the September 17th meeting we will be organizing a group purchase of TI equipment, so that it will be available for the holiday season. Bring your suggestions to this meeting, and group purchases will try to be made for the items. All the MYARC items are available for purchase at special prices, and if there is interest in purchasing other items such as disk drives, hard drives, printers, etc., please let us know.

Well that's all for now, hope to see you all at our meetings!

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What's Next for the TI Community

By Dave Ramsey

From Manners Newsletter

Dec 87 - Jan 88

Right now, there are lots of TI owners who are debating whether to stay with their current machine or to move on to something else. Now, that's a matter that has to be decided by you. Often it is decided for you, especially in the case of business usage. Sometimes what you need to do is supported with software available only on one machine. In such a case, your options are very small. In other cases, there is simply the desire to be part of the "mainstream" of microcomputing. In today's market, that means IBM PC compatible or perhaps using a Macintosh. But there is still that segment of the computer population that uses computers at home and for fun. There are a lot of those people in the 4A community. They are the folks I want to talk to here.

There's been a lot of static about the Myarc 9640 computer. Myarc has caused much of it by failing to deliver promised goods on schedule. A lot of it is due to disgruntled owners who don't yet have anything to run on their new computer besides MYWORD and TI-99/4A applications. I've yelled recently as loud as anyone and no one is even sure if the situation at Myarc is improving. But something else is starting to happen as well. Programming tools are starting to appear for the 9640. Excellent examples of MDOS oriented code are popping up. Documentation is beginning to appear.

Last night, without having ever written any serious MDOS code before this besides a few simple "Hello World" type programs, I wrote a file typing utility called MORE. MORE is designed to replace the MDOS TYPE command. If you've used MDOS or CPM or many other systems, you know that the TYPE command usually just types out a text file to the screen without pausing. Often it will scroll by so fast that it can't be read. You can usually stop it with CTRL-S but that is a haphazard operation at best. I wrote MORE to solve that problem. MORE was designed and written, assembled, and debugged in a matter of 6 hours total. Because of the excellent system interface designed by Paul Charlton, writing assembly programs for MDOS is very easy.

This brings me to the heart of the issue. Right now, the 9640 is capable of running almost all of your 4A software. In a short while, the other creative people like you and me are going to start filling the software void in the MDOS world. For the hobbyist, this is all new territory. Who will write a terminal emulation program for the 9640? Who will write the first native mode programming editor or word processor for the 9640? Who's going to write the first game using 512 x 424 hi-res graphics? I'll tell you that I already have a relational database manager for my Z80 with its own ad hoc query language. I'm thinking real hard about how to port that to the 9640. Right now, it is fully as powerful as DBase-II was. With suitable changes, it could even be made DBase compatible.

I admit that there are advantages to owning a popular computer. My Z80 CPM system has public domain and commercial software coming out my ears. But there is, at least for me, a tremendous interest in new computers. There is a challenge in writing some of the first applications for a particular machine. There is a great deal of enjoyment in the comraderie that belonging to a close-knit group of hobbyists can bring.

Right now, the MDOS community has better tools at their disposal than the CPM community did when it began. The excellent TI Editor/Assembler can still be used from within the 99/4A emulation mode as can the MYWORD editor for both word processing and program development. Paul Charlton's linker provides the other critical tool for working with MDOS. With it, you can create a 9640 applications too. The system documentation, while still not voluminous, covers all the important points. With tools just like this, the CPM community created text editors. They wrote communications programs and true relational database managers. They wrote C and Pascal compilers as well as LISP interpreters. They wrote them all in assembler using tools even simpler than these.

I think that these kinds of challenges and opportunities are what many in the 4A community are really looking for. You have the added advantage that even though this is new territory, you don't need to learn another assembly language all over again. So let me say this - if you use a 4A purely as a hobbyist and if you are interested in the new 99xxx family of chips, think hard about getting a Myarc 9640 for yourself. If you thrive on challenges but want a better programming environment than the 99/4A currently offers, the 9640 is definitely one option. Consider it and then help other 9640 owners make this a fun and useful computer to own. As I said, it's a personal decision. But if programming fun is one of your considerations, the 9640 will fulfill it.

Editor's note: AMEN.....

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WHAT IS PC PURSUIT

By Dave Ratcliffe
Wiz Tib SySop

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Those of us who use the computer to communicate with bulletin boards inother cities know the feeling of panic that sets in when the monthly phone bill arrives. Calling BBS's long distance can be a costly proposition. It is even more so for a BBS SySop. Text files and software don't grow on trees after all, and supplying a BBS with both, means LOTS OF CALLS. Until now, my monthly phone bill for computer-related calls has hovered in the $75 - $100 range. My wife, meanwhile, has hovered over me with intent to do bodily harm, if the bills kept coming in that high! Luckily, someone at Telenet hada great idea. They call it **PC PURSUIT.**

What PC PURSUIT amounts to is a way to make unlimited long distance calls to computer BBS's in certain areas for a flat fee of $25 a month!!!!

HERE'S HOW IT WORKS: First you call your local TELENET access number (usually 1 number for 300/1200 baud and another for 2400 if it's available). When your computer connects, you choose the area code you are calling and the speed you will use, then enter your ID# and Password. Upon connection to terminal in the area code you want, you simply treat thesystem as if you were dialing from your own modem (ie. enter ATDT 7$((). If you get a **CONNECT** on your screen, you are on-line and can stay that way as long as you wish. ($25 flat rate, remember?). If the system you are calling is busy, the word **BUSY** will appear on your screen. You can tthen enter a?, the normal Hayes command for re-dial, and keep trying till you get a connect. When you are finished with your session, you can disconnect from the area code you were calling and connect with another to make more calls.

NOW HERE ARE THE DRAWBACKS. While you can access PCP from any city with a TELENET number, you can **ONLY** call areas that have been set up with thenecessary equipment. To date, only 25 cities are so equipped; Los Angeles, Tampa, Chicago, and others teeming with BBS's. NEXT, PCP charges you in one of two ways. Either by regular monthly postings to the credit card of your choice, or by automatic withdrawals from your checking account. They believe that avoiding a monthly mailed bill helps keep the costs down. LASTLY, some of the most heavily used area codes or "nodes" do not have enough lines for easy access. A call to the 202 area can take several hours toget through, because of thelimited number of access lines. The Bonuses are obvious!! Unlimited length and number of calls to PCP cities! No matter how many calls you make, you pay ($25) per month MAX!!!

ONE IMPORTANT NOTE: PCP has **NOTHING** to do with CompuServe, The Source, Delphi or GEnie.. They all have their own access numbers.

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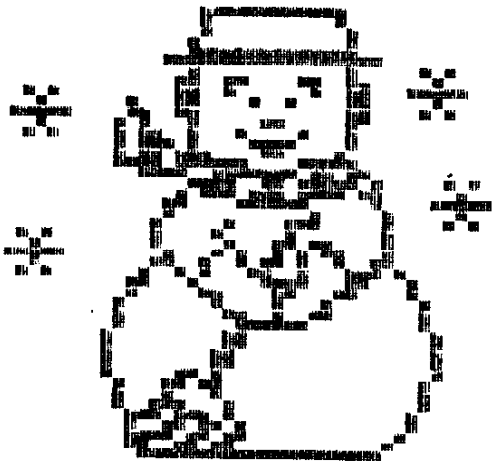

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THINK

COOL

TIPS FROM THE TIGERCUB

#45

TIGERCUB SOFTWARE
156 Collingwood Ave.
Columbus, OH 43213

Distributed by Tigercub Software to TI-99/4A Users Groups for promotional purposes and in exchange for their newsletters. May be reprinted by non-profit users groups, with credit to Tigercub Software.

Over 130 original programs in Basic and Extended Basic, available on cassette or disk, now reduced to just $1.00 each, plus $1.50 per order for cassette or disk and PP&M. Cassette programs will not be available after my present stock of blanks is exhausted.
Descriptive catalogs, while they last, $1.00 which is deductable from your first order.

Tigercub Full Disk Collections, reduced to $5 postpaid. Each of these contains either 5 or 6 of my regular $2 catalog programs, and the remaining disk space has been filled with some of the best public domain programs of the same category. I am NOT selling public domain programs - they are a free bonus!
TIGERCUB'S BEST, PROGRAMMING TUTOR, PROGRAMMER'S UTILITIES, BRAIN GAMES, BRAIN TEASERS, BRAIN BUSTERS!, MANEUVERING GAMES, ACTION REFLEX AND CONCENTRATION, TWO-PLAYER GAMES, KID'S GAMES, MORE GAMES, WORD GAMES, ELEMENTARY MATH, MIDDLE/HIGH SCHOOL MATH, VOCABULARY AND READING, MUSICAL EDUCATION, KALEIDOSCOPES AND DISPLAYS

NUTS & BOLTS (No. 1), a full disk of 100 Extended Basic utility subprograms in merge format, ready to merge into your own programs. Plus the Tigercub Menuloader, a tutorial on using subprograms, and 5 pages of documentation with an example of the use of each subprogram. Reduced to $15.00 postpaid.
NUTS & BOLTS NO. 2, another full disk of 108 utility subprograms in merge format, all new and fully compatible with the last, and with 10 pages of documentation and examples. Also $15 postpaid.

```
*****************************
* NUTS & BOLTS #3 is now    *
* ready, another full disk  *
* of 140 new merge-format   *
* utility subprograms, all  *
* compatible with the pre-  *
* vious. With 11 pages of   *
* documentation, $15 ppd.   *
*****************************
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TIPS FROM THE TIGERCUB, a full disk containing the complete contents of this newsletter Nos. 1 through 14, 50 original programs and files, reduced to $10 ppd.
TIPS FROM THE TIGERCUB VOL. 2, another diskfull, complete contents of Nos. 15 through 24, over 60 files and programs, also just $10
TIPS FROM THE TIGERCUB VOL. 3, another 62 programs, tips and routines from Nos. 25 through 32, $10 postpaid.
TIPS FROM THE TIGERCUB VOL. 4, another 48 programs and files from issues 33 through 41, also $10 postpaid.

Here is a versatile printer utility which will accept all printer control codes, print in 1 to 5 columns with choice of column separation and margin width, allow alternate margins and pause at end of page to turn paper over, and will load and print a diskfull of files one after another. It is set up for the Gemini 10X and may require modification for other printers.

```
100 DIM M$(400),F$(50)
110 GOTO 150
120 K,ST,SET,S,P$,P,CL,DW$,S
S$,I$,D$,E$,NC,CW,TC,TA,TX,A
V,CS,S$,LT,A$,LSP,LP,RM,OK$,
QQ$,X,F$(),SL,F,IP,M$(),T$,F
LAG,J,PP,LT$
130 CALL CLEAR :: CALL KEY :
: CALL COLOR :: CALL SCREEN
:: CALL SOUND
140 !@P-
150 CALL CLEAR :: CALL KEY(3
,K,ST):: ON WARNING NEXT
160 FOR SET=0 TO 14 :: CALL
COLOR(SET,2,8):: NEXT SET ::
 CALL SCREEN(5)
170 DISPLAY AT(3,6):"TIGERCU
B PRINTALL": :TAB(7);"Copyri
ght 1987":TAB(6);"Tigercub S
oftware" !programmed by Jim
 Peterson
180 DISPLAY AT(12,1):"May be
 distributed without";"restr
iction providing that";"no p
rice or copying fee is";"cha
rged."
190 DISPLAY AT(18,7):"TURN P
RINTER ON!"
200 DISPLAY AT(20,8):"PRESS
ANY KEY" :: DISPLAY AT(20,8)
:"press any key" :: CALL KEY
(0,K,S):: IF S=0 THEN 200 EL
SE CALL CLEAR
210 DISPLAY AT(12,1):"PRINTE
R DESIGNATION?" :: ACCEPT AT
(14,1)BEEP:P$ :: IF POS(P$,"
.LF",1)=0 THEN P$=P$&".LF"
220 ON ERROR 230 :: OPEN #1:
P$,VARIABLE 255 :: ON ERROR
STOP :: PRINT #1:CHR$(27);"@
" :: CALL CLEAR :: GOTO 240
230 DISPLAY AT(20,1):"CANNOT
 OPEN PRINTER!" :: RETURN 21
0
240 DISPLAY AT(12,1):"PRINT
SIZE?": :"  (1) PICA":"  (2)
```

```
 ELITE":"  (3) CONDENSED"
250 ACCEPT AT(12,13)VALIDATE
("123")SIZE(1):P :: PRINT #1
:CHR$(27);"B";CHR$(P);
260 !The values 80, 96 and 1
36 in the next line are the
maximum number of pica, elit
e and condensed characters p
er line on Gemini 10X
270 !Change as necessary for
 your printer!
280 CL=(P=1)*80+(P=2)*96+(P=
3)*136 :: CL=ABS(CL)
290 DISPLAY AT(12,1)ERASE AL
L:"DOUBLE-WIDTH? (Y/N) N" ::
 ACCEPT AT(12,21)SIZE(-1)VAL
IDATE("YN")BEEP:DW$ :: IF DW
$="Y" THEN PRINT #1:CHR$(27)
;"W";CHR$(1);:: CL=CL/2
300 DISPLAY AT(12,1)ERASE AL
L:"SUPERSCRIPT? (Y/N) N" ::
ACCEPT AT(12,20)SIZE(-1)VALI
DATE("YN")BEEP:SS$ :: IF SS$
="Y" THEN PRINT #1:CHR$(27);
"S";CHR$(0);
310 DISPLAY AT(12,1)ERASE AL
L:"ITALICS? (Y/N) N" :: ACCE
PT AT(12,16)VALIDATE("YN")SI
ZE(-1)BEEP:I$ :: IF I$="Y" T
HEN PRINT #1:CHR$(27);"4";
320 DISPLAY AT(12,1)ERASE AL
L:"DOUBLE-STRIKE? (Y/N) Y" :
: ACCEPT AT(12,22)VALIDATE("
YN")SIZE(-1)BEEP:D$ :: IF D$
="Y" THEN PRINT #1:CHR$(27);
"G";
330 IF P<>3 AND P<>4 THEN DI
SPLAY AT(12,1):"EMPHASIZED?
(Y/N) Y" :: ACCEPT AT(12,19)
VALIDATE("YN")SIZE(-1)BEEP:E
$ :: IF E$="Y" THEN PRINT #1
:CHR$(27);"E";
340 DISPLAY AT(12,1)ERASE AL
L:"NUMBER OF COLUMNS? (1-5)"
 :: ACCEPT AT(12,26)VALIDATE
("12345")SIZE(1)BEEP:NC
350 DISPLAY AT(12,1):"COLUMN
 WIDTH (NUMBER OF": :"CHARAC
TERS?" :: ACCEPT AT(14,13)VA
LIDATE(DIGIT)BEEP:CW
360 TC=NC*CW :: TA=CL-TC ::
TX=TC+NC*2-2
370 IF TX<=CL THEN 390 :: DI
SPLAY AT(18,1):STR$(NC)&" co
lumns of "&STR$(CW)&" charac
ters":"plus 2-column spacing
 equals"
380 DISPLAY AT(20,1):STR$(TC
)&" characters; maximum":"av
ailable in print size":"sele
cted is "&STR$(CL)&".":"****
Please reselect****" :: GOTO
 240
390 IF NC=1 THEN 410 :: AV=I
NT(TA/(NC-1)):: DISPLAY AT(1
2,1)ERASE ALL:"COLUMN SEPARA
TION?":"MINIMUM 2":"MAXIMUM
"&STR$(AV)&" AVAILABLE ":"2"
400 ACCEPT AT(15,1)VALIDATE(
DIGIT)SIZE(-2)BEEP:CS :: IF
CS<2 OR CS>AV THEN 400 ELSE
S$=RPT$(" ",CS)
410 TA=TA-CS*(NC-1):: IF TA<
2 THEN 450
420 DISPLAY AT(12,1)ERASE AL
L:"LEFT MARGIN WIDTH?": :"MA
XIMUM "&STR$(TA)&" AVAILABLE
" :: ACCEPT AT(12,20)VALIDAT
E(DIGIT)BEEP:LT :: IF LT>TA
THEN 420
430 DISPLAY AT(12,1):"ALTERN
ATING LEFT/RIGHT": :"MARGIN?
 (for pages to be":"later re
produced on both":"sides) (Y
/N) N"
440 ACCEPT AT(16,14)VALIDATE
("YN")SIZE(-1):A$
450 LSP=12 :: DISPLAY AT(10,
1):" ":" ":"LINES PER PAGE?
60":" ":" ":" ":" " :: ACCEP
T AT(12,17)VALIDATE(DIGIT)SI
ZE(-3):LP :: IF LP<70 THEN 4
90
460 DISPLAY AT(12,1):"LINE S
PACING - 72 INCH" :: DISPLAY
 AT(11,16):"__" :: ACCEPT AT
(10,16)VALIDATE(DIGIT)BEEP:L
SP
470 IF LP/(INT(72/LSP))>11.5
 THEN DISPLAY AT(20,1):"WON'
T FIT!" :: GOTO 450
480 PRINT #1:CHR$(27);"A";CH
R$(LSP);
490 RM=TA-LT
500 DISPLAY AT(12,1)ERASE AL
L:STR$(NC)&" columns of":STR
$(CW)&"-character width":"le
ft margin of "&STR$(LT)&" sp
aces"
510 DISPLAY AT(15,1):STR$(LP
)&" lines per page":"with "&
STR$(LSP)&"/72 line spacing"
520 DISPLAY AT(17,1):STR$(CS
)&" spaces between columns":
"right margin of "&STR$(RM)&
" spaces": :"OK? (Y/N) Y"
530 ACCEPT AT(20,11)VALIDATE
("YN")SIZE(-1)BEEP:OK$ :: IF
 OK$="N" THEN 240
540 DISPLAY AT(12,1)ERASE AL
L:"PAUSE AT END OF PAGE? N"
:: ACCEPT AT(12,23)VALIDATE(
"YN")SIZE(-1):QQ$
550 DISPLAY AT(1,1)ERASE ALL
:"INPUT FILENAMES TO BE":"PR
INTED.":"PRESS ENTER WHEN DO
NE"
560 X=X+1 :: DISPLAY AT(X+3,
1):"FILENAME? DSK" :: ACCEPT
 AT(X+3,14)SIZE(-12)BEEP:F$(
X)
570 IF F$(X)="" THEN X=X-1 :
: GOTO 600 ELSE F$(X)="DSK"&
F$(X)
580 ON ERROR 590 :: OPEN #2:
F$(X),INPUT ::: CLOSE #2 ::
GOTO 560
590 ON ERROR STOP :: CALL SO
UND(1000,110,0,-4,0):: DISPL
AY AT(20,1):"CANNOT OPEN "&F
$(X):: X=X-1 :: RETURN 560
600 SL=1
610 F=F+1 :: IF F>X THEN 700
 :: ON ERROR 620 :: OPEN #2:
F$(F),INPUT :: DISPLAY AT(22
,1):"READING ";F$(F):: ON ER
ROR STOP :: GOTO 630
620 CALL SOUND(1000,110,0,-4
,0):: DISPLAY AT(20,1):"COUL
D NOT OPEN "&F$(F):: STOP
630 FOR IP=SL TO LP*NC :: LI
NPUT #2:M$(IP):: IF LEN(M$(I
P))=0 THEN 670 :: IF NC>1 AN
D POS(M$(IP),CHR$(13),1)<>0
THEN M$(IP)=SEG$(M$(IP),1,LE
N(M$(IP))-1)
640 !CORRECTED VERSION -OMIT
THIS LINE - IT DOES MORE
HARM THAN GOOD!
650 IF LEN(M$(IP))<=CW THEN
670 :: T$=SEG$(M$(IP),1,CW):
: CALL SOUND(1000,110,0,-4,0
):: DISPLAY AT(12,1):M$(IP);
" OVER";CW;"CHARACTERS":"TRU
NCATED TO ";T$:"OK?"
660 CALL KEY(3,K,S):: IF S=0
 THEN 660 ELSE IF K<>89 THEN
 STOP ELSE M$(IP)=T$
670 M$(IP)=M$(IP)&RPT$(" ",C
W-LEN(M$(IP)))
680 IF EOF(2)=1 THEN CLOSE #
```

```
2 :: SL=IP+1 :: GOTO 610
690 NEXT IP :: IF EOF(2)=1 T
HEN CLOSE #2 :: GOTO 720 ELS
E GOTO 720
700 ON ERROR 710 :: FLAG=1 :
: FOR J=IP+1 TO NC*LP :: M$(
J)="" :: NEXT J :: GOTO 720
710 STOP
720 PP=PP+1 :: IF PP/2=INT(P
P/2)AND A$="Y" THEN LT$=RPT$
(" ",RM)ELSE LT$=RPT$(" ",LT
)
730 FOR J=1 TO LP :: ON NC G
OSUB 750,760,770,780,790 ::
NEXT J :: PRINT #1:CHR$(12):
: SL=1 :: IF F>X THEN STOP E
LSE IF QQ$="N" THEN 630
740 DISPLAY AT(24,1)BEEP:"PR
ESS ANY KEY TO CONTINUE" ::
CALL KEY(0,K,S):: IF S=0 THE
N 740 ELSE DISPLAY AT(24,1):
"" :: GOTO 630
750 PRINT #1:LT$&M$(J)&CHR$(
10):: RETURN
760 PRINT #1:LT$&M$(J)&S$&M$
(J+LP)&CHR$(10):: RETURN
770 PRINT #1:LT$&M$(J)&S$&M$
(J+LP)&S$&M$(J+LP*2)&CHR$(10
):: RETURN
780 PRINT #1:LT$&M$(J)&S$&M$
(J+LP)&S$&M$(J+LP*2)&S$&M$(J
+LP*3)&CHR$(10):: RETURN
790 PRINT #1:LT$&M$(J)&S$&M$
(J+LP)&S$&M$(J+LP*2)&S$&M$(J
+LP*3)&S$&M$(J+LP*4)&CHR$(10
):: RETURN
```

This is an improved version of the math program in Tips #36.

```
100 CALL CLEAR :: RANDOMIZE
110 B=INT(5*RND+2):: IF B=B2
 THEN 110 ELSE B2=B
120 F=INT(5*RND+2):: IF F=F2
 THEN 120 ELSE F2=F
130 D=INT(5*RND+2):: IF D=D2
 THEN 130 ELSE D2=D
140 X=F*B*D
150 BB=INT(5*RND+2):: IF BB=
DD2 OR BB=B THEN 150 ELSE BB
2=BB
160 DD=INT(5*RND+2):: IF DD=
DD2 OR DD=D THEN 160 ELSE DD
2=DD
170 F=F*BB*DD
180 DISPLAY AT(3,1)ERASE ALL
:"IF";B;"BOYS CAN CATCH";X;"
FROGS IN";D;"DAYS,"
190 DISPLAY AT(6,1):"HOW MAN
Y FROGS CAN";BB;"BOYS":"CATC
H IN";DD;"DAYS?"
210 ACCEPT AT(7,19):Q
220 IF Q=F THEN DISPLAY AT(9
,1):"THAT'S RIGHT!" :: GOTO
110
230 DISPLAY AT(9,1):"NO, THA
T'S WRONG."
240 DISPLAY AT(11,1):"IF";B;
"BOYS CAN CATCH";X;"FROGS IN
";D;"DAYS"
250 DISPLAY AT(13,1):"THEN O
NE BOY CAN CATCH";X/B;"FROGS
 IN";D;"DAYS"
260 DISPLAY AT(15,1):"AND ON
E BOY CAN CATCH";X/B/D;"FROG
S IN ONE DAY."
270 DISPLAY AT(17,1):"SO, IF
 ONE BOY CAN CATCH";X/B/D;"F
ROGS IN ONE DAY,"
280 DISPLAY AT(19,1):"THEN";
BB;"BOYS CAN CATCH";X/B/D*BB
;"FROGS IN ONE DAY"
290 DISPLAY AT(21,1):"AND";B
B;"BOYS CAN CATCH";X/B/D*BB*
DD;"FROGS IN";DD;"DAYS."
300 DISPLAY AT(24,1):"PRESS
ANY KEY" :: CALL KEY(0,K,S):
: IF S=0 THEN 300 ELSE 110
```

Here's an idea for an unusual title screen -

```
100 CALL CLEAR :: FOR SET=1
TO 8 :: CALL COLOR(SET,1,1):
: NEXT SET :: CALL CHAR(100,
"0",101,"0")
110 X$(0)="4043241818244202"
 :: X$(1)="4021261818648402"
 :: X$(2)="2020131C38C80404"
 :: X$(3)="1010101FF8080808"
 :: X$(4)="081010907E111020"
120 X$(5)="0808081F81F101010"
 :: X$(6)="0404C8381C132020"
 :: X$(7)="0284641818262140"
130 A$=RPT$(CHR$(100)&CHR$(1
01),13):: FOR R=1 TO 24 :: C
=C+1+(C=2)*2 :: DISPLAY AT(R
,C):A$ :: NEXT R
140 CALL VCHAR(1,29,1,168)
150 CALL SCREEN(2):: CALL CO
LOR(9,5,16):: FOR S=1 TO 8 :
: CALL COLOR(S,16,2):: NEXT
S
160 DISPLAY AT(5,5):" TIGERC
UB SOFTWARE ";:: DISPLAY AT(
8,6):" SQUIRMY SCREEN ";
170 FOR J=0 TO 7 :: CALL CHA
R(100,X$(J)):: CALL CHAR(101
,X$(7-J)):: NEXT J
180 CALL KEY(0,K,S):: IF S=0
 THEN 170
```

MEMORY FULL

Jim Peterson

PRETTY PLEASE, PINCH MY DEAR

AUNT SALLY RUDELY!

by Jim Peterson

My apologies to dear old Sal. That mnemonic device is usually given as just "My Dear Aunt Sally", but I expanded it a bit. It is intended to remind you of the sequence in which your computer solves an equation, which is -

(P)arentheses
(P)owers (exponentiation)
(P)refixes (plus and minus)
(M)ultiplication
(D)ivision
(A)ddition
(S)ubtraction
(R)elational operations

So what? Well, if one of your program lines isn't giving you the expected results, it may well be that you forgot to pinch Saly properly!

The computer goes through the line from left to right 5 times (I don't know if it really does, but that is the easiest way to explain it!) The first time through, it looks for a left hand parenthesis. If it finds one, it stops at the

first right hand parenthesis. If it finds one but not the other, it CRASHES! When it finds a right parenthesis, it backs up leftward until it comes to the closest left hand parenthesis. It solves everything between those two parentheses, step by step in accordance with the following priorities, and then erases those two. Then it goes through the same routine again until it finds no more parentheses.

Need a "for instance"? OK -

```
X=((10*2)-6)+(8/4)
X=((20)-6)+(8/4)
X=(20-6)+(8/4)
X=(14)+(8/4)
X=14+(8/4)
X=14+(2)
X=14+2
X=16
```

Next it goes through the equation looking for the caret sign. That is the little ^ that tells it to multiply the preceding number by itself as many times as the following number. Example -

4^2 means 4 times 4
6^3 means 6 times 6 times 6

Then, the prefixes. That just means that, for instance, if removing the parentheses from -(-6) has left you with --6, it becomes a +6, of course. I suppose that ABS and SGN are also worked here.

Now, multiplication and division. These are both done in one pass through because it doesn't make any difference which is done first. 10*2/4 is the same as 2/4.

Next, addition and subtraction, also in one pass because 10+4-2 is the same as 4-2+10.

Finally, the relational operations, which had best be the subject of a separate article. And finally finally the string concatenations, but let's keep old Sal out of those.

Note that everything between a pair of parentheses is worked as a separate equation, step by step in the above sequence, before the parentheses are erased.

So, why should you need to worry about all this? Well -

```
10*4-2=38
10*(4-2)=20
10*4^3=640
(10*4)^3=64000
((10*4)^3=....SYNTAX
ERROR!
```

Makes a difference, doesn't it?

The important things to remember are -

If you want to add two numbers together before you multiply or divide their sum, put them in parentheses (2+3)*4.

If you want to subtract one number from another before you multiply or divide the result, put them in parentheses (10-4)/2.

If you want to add, subtract, multiply or divide numbers before you increase them by any power, put them in parentheses (10*4+8)^3.

If you keep Sally in mind, you will have fewer bugs in your programs!

<*><*><*><*><*><*><*><*><*>

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Walt Disney Productions

```
100 CALL CLEAR :: CALL SCREE
N(16):: DISPLAY AT(3,8):"THE
 '37' GAME" !by Jim Peterson
110 DISPLAY AT(5,1):" We wil
l take turns picking":"a num
ber from 1 to 5, but":"not t
he number that was just":"pi
cked."
120 DISPLAY AT(10,1):" The n
umbers we pick will be":"add
ed to the total count."
130 DISPLAY AT(13,1):" Whoev
er reaches 37 is the":"winne
r, but if you go over":"37 y
ou lose."
140 CALL SHOW(20,1,"Press an
y key to start")
150 CALL KEY(0,K,S):: IF S=0
 THEN 150
160 DATA 4,11,17,24,30,37
170 DATA 262,330,392,523,523
180 DATA 1047,784,659,523,52
3
190 C,P=0 :: CALL CLEAR :: C
ALL MAGNIFY(2):: R=10 :: FOR
 J=1 TO 5 :: CALL SPRITE(#J,
48+J,5,R,10):: R=R+30 :: NEX
T J
200 CALL SHOW(24,1,"(Y)ou or
 (M)e first?"):: ACCEPT AT(2
4,22)VALIDATE("YM")SIZE(1):Q
$ :: DISPLAY AT(24,1):""
210 IF Q$="Y" THEN CALL SHOW
(22,8,"I pick 4"):: CALL COL
OR(#4,1):: P=4 :: C=4 :: CAL
L SHOW(3,10,"COUNT=4")
220 CALL SHOW(20,8,"Pick you
r number"):: ACCEPT AT(20,26
)VALIDATE("12345"):N :: IF N
=P THEN 220
230 IF P>0 THEN CALL COLOR(#
P,5)
240 CALL COLOR(#N,1):: P=N :
: C=C+N :: CALL SHOW(3,10,"C
OUNT= "&STR$(C)):: IF C=37 T
HEN 320 ELSE IF C>37 THEN 34
0
250 RESTORE 160
260 READ X :: IF C<X THEN B=
X-C ELSE IF X<37 THEN 260
270 CALL SHOW(22,8,"I'm thin
king..."):: FOR Y=1 TO 700 :
: NEXT Y
280 IF B>5 AND B/2=INT(B/2)T
HEN B=B/2
290 IF B>5 OR B=P THEN B=1-(
P=1)
```

PUTTING IT ALL TOGETHER #4

by Jim Peterson

The hardest part of learning to program is not in learning what the various commands do - it is in learning how to put them together to do what you want them to do!

Key in these mini-programs and run them to see what they do. Then read the explanation of each line and see how it does what it does.

The first program is one in which the computer uses logic to play a game against you. This one also demonstrates the use of DATA.

Line 100 clears the screen, turns it white, displays the title and instructions. Note that several lines of screen text can be programmed in one DISPLAY statement, separated by the colon print separators. The last character of the line must not extend beyond the quotation mark above, if it is to fit on one line of the screen.

Line 140 calls a subprogram which we will describe later, and line 150 holds the text on the screen until any key is pressed.

Line 170 DATA contains values to used by the computer in playing the game, 180 contains the frequencies to play a salute if you win, and 190 has the frequencies to mourn your losses.

In line 210, P is the number which was picked by the other player, which has been made invisible and cannot be picked. C is the cumulative count of numbers picked. These would be 0 by default for the first game but must be reset here because program execution returns here to start a new game.

The screen is cleared again, the sprites are set to magnification 2 (single character double-sized), and the J loop places 5 sprites numbered 1 - 5 on the screen, colored dark blue (5), with ASCII codes 49 to 53 (1 to 5), the first at dot-row 10 and spaced 30 dotrows apart.

Line 220 uses the subprogram for a display, accepts input validated for a single character Y or M, then displays a blank to erase the line.

In line 230, if the computer is to go first it automatically picks 4, changes sprite #4 to color 1 (invisible), sets P (number chosen) and C (cumulative count) to 4, and displays count.

Otherwise, execution falls through to the next line where the player's input is requested and accepted, validated as between and 1 and 5, and rejected if the same as the previous pick.

In line 250, if P is not 0 (i.e., if it is not the first move of the game), the sprite of the number picked by the computer is restored to the dark blue color. The sprite of the number picked

```
300 CALL SHOW(22,8,"I pick "
&STR$(B)) :: CALL COLOR(#P,5)
:: CALL COLOR(#B,1) :: P=B ::
 C=C+B :: CALL SHOW(3,10,"CO
UNT= "&STR$(C))
310 IF C=37 THEN 340 ELSE IF
 C>37 THEN 320 ELSE 220
320 RESTORE 170 :: FOR J=1 T
O 5 :: READ F :: CALL SOUND(
100,F,5,F*1.03,5) :: NEXT J :
: CALL SHOW(12,8,"YOU WIN!")
330 CALL SHOW(15,8,"Play aga
in? (Y/N)") :: ACCEPT AT(15,2
6)VALIDATE("YN") :Q$ :: IF Q$
="N" THEN STOP ELSE 190
340 RESTORE 180 :: FOR J=1 T
O 5 :: READ F :: CALL SOUND(
300,30000,30,30000,30,F,30,-
4,5) :: NEXT J :: CALL SHOW(1
2,8,"YOU LOSE!") :: GOTO 330
350 SUB SHOW(R,C,T$) :: FOR J
=1 TO 10 :: DISPLAY AT(R,C) :
" " :: DISPLAY AT(R,C) :T$ ::
 NEXT J :: SUBEND
```

```
100 DISPLAY ERASE ALL AT(3,5
):"THE COST OF CREDIT" ! by
Jim Peterson
110 S,T,X=0 :: DISPLAY AT(8,
1) :"AMOUNT OF PURCHASE?" ::
ACCEPT AT(8,21) :A :: B,T=A :
: DISPLAY AT(10,1) :"CREDIT C
ARD INTEREST RATE?" :: ACCEP
T AT(11,1) :R
120 DISPLAY AT(13,1) :"SAVING
S ACCOUNT INT. RATE?" :: ACC
EPT AT(14,1) :SR
130 X=X+1 :: I=B*R/100/12 ::
 B=B+I :: T=T+I :: P=B/10 ::
 B=B-P :: S=S+P+S*SR/100/12
:: IF S<A THEN 130
140 D$="$"&STR$(INT((T-A+S-A
+.5)*100)/100)
150 DISPLAY AT(17,1) :"If you
 had saved the amount":"of y
our minimum 10% of the":"bal
ance credit card payment":"e
ach month for";X;"months,"
160 DISPLAY AT(21,1) :"and us
ed it to pay cash, you":"wou
ld have saved ";D$ :: GOTO 1
10
```

is made invisible, its value assigned to P, and the count is incremented and displayed. If the player has reached 37 he has won, if he has gone over 37 he has lost, otherwise the computer goes next.

Line 170 DATA contains the numbers which the computer will try to reach, in sequence, in order to win. The line is restored and the data is read, one value at a time. If the count has already gone past that value, but it is not yet 37, the next value is read. Otherwise, the number to be selected by the computer, B, is X-C, which will bring it to the desired number X.

In line 290, the "I'm thinking" is just for show and the delay loop keeps the response from being too fast. If B is more than 5, it cannot be picked, of course. In this case, the optimum number is halfway between C and X because the opponent will not be able to reuse it to reach X. But this can only be selected if B can be evenly divided by 2, i.e. if it is an even number, which is determined by B/2=INT(B/2).

Otherwise, in line 330, if B is more than 5 (it will not be if successfully divided in the previous line) or if it is the same as the one previously selected, the strategy is to select the lowest number possible, which is 1 or, if 1 was just used, the -1 truth value of B=P will increase it to 2.

Lines 320-330 are similar to line 260; if the game is not yet over, execution returns to 240.

Execution jumps to 340 when the player has won. Line 180 DATA is restored, read in and used to play the five notes, which are increased by 1.03 in the second voice to give the arcade effect. If the player loses, line 360 restores 190 and reads values which are placed in the 3rd voice at a silent volume but sounded through the -4 noise in the 4th voice.

The subprogram in line 370, called for all the displays, alternately displays a blank and the string T$ at row R, column C for a fast blinking effect.

The Credit program uses some very simple equations. In line 110, the variables are reset to 0 because the program returns here after each calculation. The amount (A) is also at this time the balance to be paid (B) and the total to be paid.

X is the counter of months. I is the interest for one month (rate/100 to get a decimal, /12 to get the monthly rate). New balance is the balance plus the month's interest. Total (T) to be paid is the previous total plus this interest. The payment for the month is 1/10 of the balance, and the new balance is the balance minus the payment.

Savings (S) is previous savings plus the payment plus the month's interest on the savings. If the savings do not yet equal the amount, go back for another month; else, potential savings are difference between actual cost and total paid plus any difference (in final month) between S and A.

==========

ANALYSIS OF ARRAY CAPACITY IN TI EXTENDED BASIC

by Jim Peterson

NUMERIC

NO. OF DIMENS	MAXIMUM DIMIMUM ACCEPTED	TOTAL RECORDS	LEAVING BYTES FREE	BYTES PER RECORD	BYTES FREE AFTER RUN
1	3050	3050	64	8.07	20
2	54,54	2916	269	8.3	202
3	14,13,13	2366	944	9.95	852
4	7,6,6,6	1512	2511	14.535	2398
5	4,4,4,4,3	768	4459	26	4322
6	3,3,3,3,2,2	324	6023	56.99	5862
7	3,2,2,2,2,2,2	192	1123	121.69	938

STRINGS - MAXIMUM ACCEPTED BUT NOT RUNNABLE

1	5900	5900	28	2.002
2	76,75	5700	124	2.055
3	18,17,16	4896	198	2.377
4	8,8,8,7	3583	160	3.259
5	5,5,5,5,4	2000	1022	5.409
6	4,3,3,3,3,3	972	1580	10.555
7	3,3,3,2,2,2,2	432	1450	24.05

STRINGS - MAXIMUM RUNNABLE FOR 1-BYTE RECORDS

1	1682	1682	8464	7.009	50
2	41,40	1640	8384	7.118	166
3	12,11,11	1452	8082	7.606	795
4	6,6,6,6	1296	7022	8.75	497
5	4,4,4,4,4	1024	5572	11.17	398
6	3,3,3,3,3,2	486	5676	17.81	3183
7	3,3,2,2,2,2,2	288	4042	32.295	2539

REMARKS - Any array of more than 3 dimensions will crash with MEMORY FULL if it is not DIMensioned, even A(1,1,1,1)=1.
String arrays can be dimensioned for many more records than they will actually hold.