Texas Instrument 99/4A and Myarc 9640 Computers

Spirit of 99

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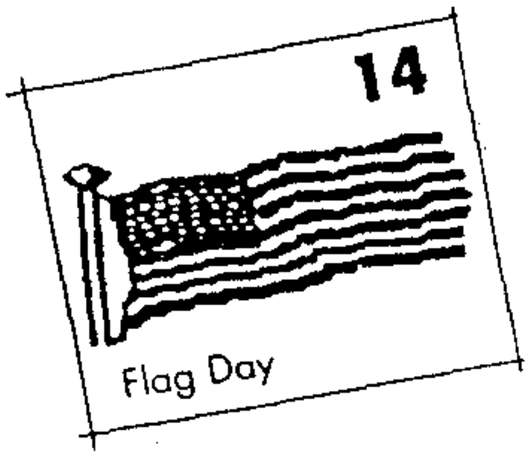

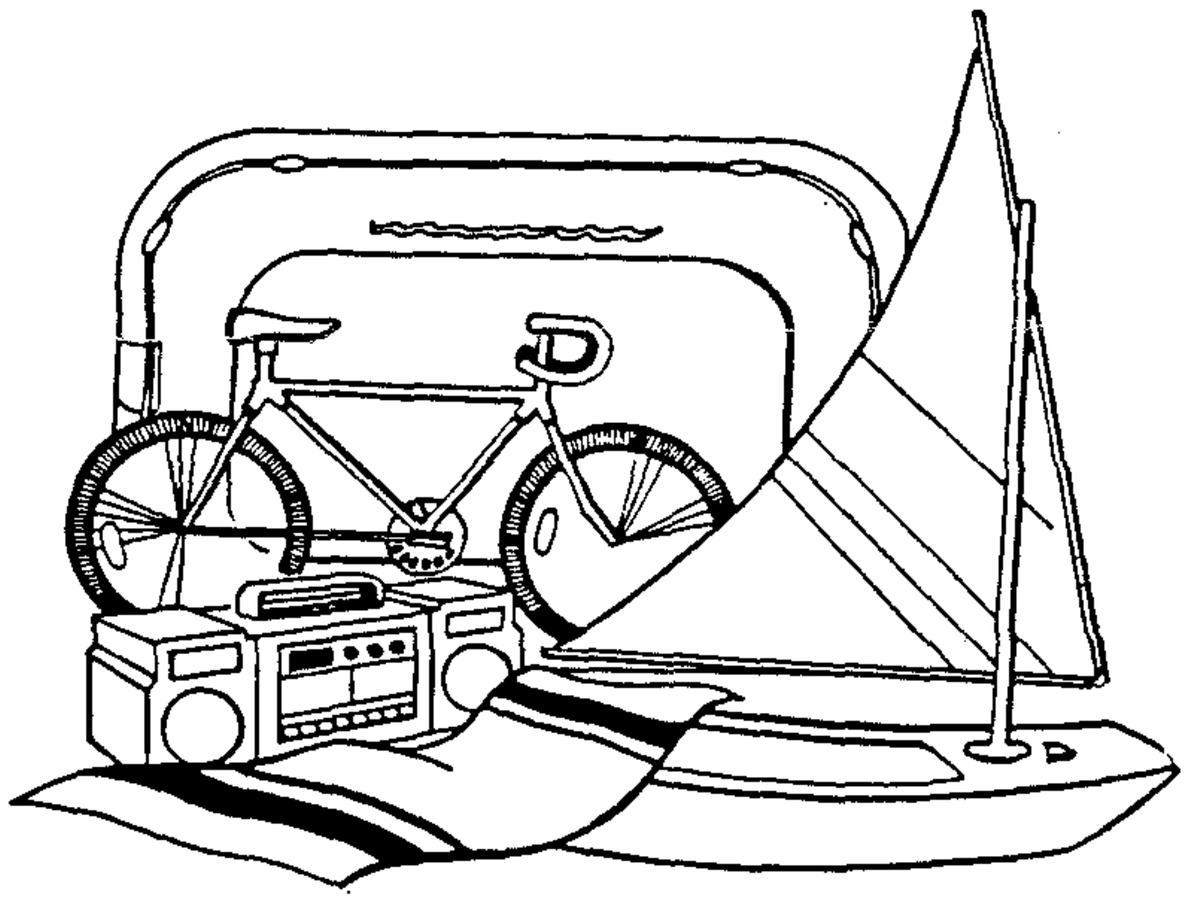

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Central Ohio Ninety Niners Inc. is a non-profit organization comprised of MEMBERS who own or use the TI99/4A computer and it's related pro-ducts and have paid a yearly membership fee of $20 and whose main objective is the exchange of Educational and Scientific information for the purpose of computer literacy.

C.O.N.N.I. meetings are held the 3rd sat-urday of each month at Chemical Abstract, 2540 Olentangy River Road Columbus, OH. Meeting time is 8:30 AM til 2:30PM, Meetings are open to the public. Membership dues ($20.00) are payable yearly to C.O.N.N.I. and cover the immediate family of the member. Please send check to our membership registrar and join C.O.N.N.I. Please address it to

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THANKS BUG NEWS
FOR THE GRAPHICS

Minutes Saturday, May 21, 1994.

Nine members present. The meeting opened shortly after nine a.m. Dick Beery lent some used disks from the K-Town table at the Lima Fair to members to look at the programs contained on them and bring back a report to the June meeting. Particularly interesting programs from these disks may be demoed at that time.

One member brought up the need for a July meeting place. President John Parkins responded that he would try to find something suitable and place a notice in the June newsletter.

Members who had been to the Lima Fair reported on what they had seen and heard. Of particular interest was the latest version of Funnelweb demonstrated by Charles Good. Outstanding features are a WYSIWYG screen display, scrolling right one column at a time (in contrast to the "leap" in former versions), and the capability of inputting to the editor screen a number of functions formerly reserved to the formatter. For most uses the Formatter can be completely ignored! (Jim Peterson, are you listening up there?--Jim, as you are probably aware, detested the formatter).

A discussion that was to have taken place regarding the Peterson disk collection and some ramifications regarding it was given to a committee to discuss and report on at the June meeting. Time constraints were the reason. Committee members include: Jean Hall, John Parkins, Everett Wade, Bob DeVilbiss (appointed in absentia!), John Broughman, and chairman Dick Beery.

Dick asked whether the club would be willing to designate him to use the small monthly payment, formerly made to Irwin Hott, to defray the cost of phoning long distance to some of the TI BBSes that are still in existence. The feeling is that some groups are reportedly keeping any new programming by members at the local level, rather than sending them to carriers such as Compu-Serve, Genie, etc. It is hoped we may be able to download some as a result of this new approach, and thus keep them, and our computer, alive.

John Parkins reported briefly on the current status of the transfer of the BBS from Irwin Hott to Bud Wright. Some progress has apparently been made; more is hoped for in the near future.

Disk librarian Dick Beery took orders for the new Funnelweb disk and also the TI-Chips giveaway disk. Copies will also be made available at the June meeting of the Geo. Seibert demonstration disks.

There followed an excellent demonstration, requested at an earlier meeting, by George Seibert on Multiplan in keeping track of one's net worth and tracking all sorts of financial details. An excellent demonstration, well-received and much appreciated. The handouts were especially helpful in assisting members in gaining an understanding of the template's features and operations.

Mention was also made of the need to seek alternative locations for two meetings during the fall, those that take place on an OSU football home game date. John Parkins will report on results of his search at a later date.

The meeting was adjourned at approximately 11:40 a.m. See you in June!

Respectfully submitted,
Dick Beery, secretary

THANKS TIsHUG

LEARN TO KNOW YOUR TI
LESSON 2
with Percy Harrison

Well I hope the first lesson was not too boring, they will get more interesting as the lessons progress but it is most essential that you have an understanding of the very basics of the TI language in order to master the more advanced operations of programming.

LESSON 2 COLOUR AND SOUND

This lesson introduces the CALL SCREEN and CALL SOUND statements and makes use of plenty of "bells and whistles" to increase program richness. Let's start.

Enter: NEW

NEW empties the memory and erases the screen. You are now ready to start this lesson.

COLOR THE SCREEN

Enter:
```
10 REM COLOR THE SCREEN
20 CALL SCREEN(14)
```

RUN the program.

Line 20 tells the computer to change the screen colour.

RULE: The number in () after SCREEN tells what colour the screen will be. Any number from 1 to 16 is acceptable.

RUN it again trying different numbers.

The colour changes back to the original screen colour as soon as the program is over.

THE COMPUTER PEEPS LIKE A BIRD

Add this line:

```
30 CALL SOUND(200,1500,15)
```

RUN it.

Did you hear it "peep"?

If you do not hear a tone, turn up the sound on your TV.

The CALL SOUND command has 3 arguments.

CALL SOUND(length, pitch,loudness)

length	1 to 4250 is the duration of the sound in milliseconds
pitch	110 to 44732 is the pitch in hertz (cycles per second)
loudness	0 (loud) to 30 (off)

Put 500 in place of the 200. Now the peep lasts longer.

Put 800 in place of 1500. Now the sound is lower.

Put 2 in place of 15. Now the peep is louder.

Try other numbers.

The CALL SOUND command will be further explained in a later lesson.

PRINTING AN EMPTY LINE

Run this:
```
10 REM SOME LINES
20 PRINT"HERE IS A LINE"
30 PRINT
40 PRINT"ONE LINE WAS SKIPPED"
```

Line 30 just prints a blank line.

STRING CONSTANTS

Look at these print statements:

```
10 PRINT "JOE"
10 PRINT "#D47ZZ*Z"
10 PRINT "19"
10 PRINT "3.14159265"
10 PRINT "I'M 14"
10 PRINT " "
```

(Note: Type and RUN each line separately)

Letters, numbers and punctuation marks are called "characters." Even a blank space is a character. Look at this:

```
10 PRINT " "
```

Characters in a row make a "string."

The letters are stretched out like beads on a string.

A string between quotation marks is called a "string constant."

It is a string because it is made of letters, numbers and punctuation marks in a row.

It is a constant because it stays the same. It does not change as the program runs.

ASSIGNMENT 2:

1. Write a program that prints your first, middle and last names.

2. Now add a "peep" before it prints each name. Make each "peep" a different tone, deep for your first name, high for your last name.

3. Now make the screen change colour for each name.

Keep practicing, more next month.

ANSWER TO LESSON 1

Assignment Question 1-2

```
10 REM GREETING
20 PRINT "HI THERE"
30 PRINT "TI COMPUTER"
```

****

WORD PROCESSING
PART 4

THANKS TIsHUG

by Col Christensen
Brisbane User Group

Last month's article covered a number of dot commands which are placed in a text file and used as instructions by the Text Formatter. Some of these have numerical parameters following them. Reviewing one point, a dot command such as .LM8 has the absolute value of 8, and sets the left margin to the 8th print column whereas .LM+4 with a relative value of 4 sets the left margin at 4 columns greater than the previous one. All relative values in dot commands refer back to the previous setting of that command except for .IN+n which refers to the left margin's setting.

HIGHLIGHTING AND SPECIAL EFFECTS

Certain characters are used by the Text Formatter as flags to effect some print output features. The characters in question are the & for underlining, @ for overstriking and ^ for required space. (ampersand, at and circumflex).

REQUIRED SPACE with ^

The circumflex (^) tells the Text Formatter that words joined by it are to be treated as one word during underlining, overstriking, filling text or adjusting text. For example, you may want to be sure a group of words such as 24 January, 1992 will appear all on one line and not be split partly on one line and partly on the next. Just use the circumflex to replace each space like this, 24^January,^1992. The required space is useful also in underlining and overstriking groups of words as explained in the next two paragraphs.

UNDERLINING with &

Wherever the Text Formatter encounters the & symbol, the text from there to the next space character will be underlined. So if your text shows &IMPORTANT, the formatter will print IMPORTANT.

But if you wish to underline a group of words there are two ways to go about it. The first is to use the & symbol before each word. Typing &The &Storm &King will print to The Storm King.

The other way is to tie the words together with the required space. In &The^Storm^King, the whole title, spaces and all, will be underlined to become The Storm King as the printout. Although this is the preferred and easiest method, there can be a small price to pay in the FI;AD format. If the title is towards the end of a line and cannot be fitted as a unit on that line, it will be wrapped in full onto the next line. That would leave the previous line with a great number of spaces between words. You may not find the appearance of such a spacy line very elegant.

OVERSTRIKING with @

In a similar way to underlining in the paragraph above, the symbol @ is used to invoke overstriking. In doing this, the Text Formatter prints over the particular word four times before finally performing a line feed. The dark printing resulting stands out very clearly and is more prominent than even the printer's emphasized style of print. If a group of words is required to be overstruck, the required space symbol (^) can be utilised in a similar fashion to that shown in the paragraph on underlining.

Although the formatter removes the & and @ flags for underlining or overstriking, you can still make it print one of these characters. Just type the character twice and the formatter will "understand".

TRANSLITERATES

This unusual word (trans=across litera=a letter and trans=across) simply means the use of one character to represent either another character or even a group of characters. That's like assigning a "¦" as a kind of variable to represent some long word or some printer code that might, say, change the print mode to enlarged italic elite print.

The formatter, when it encounters a circumflex (^) or an asterisk anywhere in the text or a period (.)placed first on a line will remove it and execute some routine that is flagged by that symbol. To be able to purposely print one of those three, you need to transliterate some other little used characters to represent any you want to print. e.g.

```
.TL 124:94<,     "¦" becomes "^"
.TL 96:42<,      "`" becomes "*"
.TL 95:46<,      "_" becomes "."
```

The <, symbols above represent the carriage return character that appears on the screen when the ‹ENTER› key is pressed. The Formatter, on receiving the first character, will intercept it and send the second character to the printer instead.

```
.TL 123:70,85,78,78,69,76,87,69,66<,
```

In this one the character "{" is transliterated to a whole group of characters. Note the commas to separate each. So, in fact, wherever the formatter encounters a "{", it prints the word "FUNNELWEB" instead. Unfortunately, it does not format the rest of the printed line accordingly. In place of the one character, it prints 9 so there would be an additional 8 characters extending past the right margin with FI;AD in force.

```
.TL 125:27,88,1,28<,
```

The "}" character this time is interpreted to be the string of four characters following the colon in the TL. This string is a printer code for setting the left and right margins. It is probably shown in the printer manual as ESC "X" (n1) (n2). In the TL, the 27 is the ESC character, 88 is the "X", and the 1 and the 28 are the left and right margin settings for the printer. The printer, on receiving these four characters, will interpret them as a printer control code sequence and remove them from the input stream of characters. They will not be printed out,

```
but from here on, printing
will only take place on lines
that are 28 characters long.
Because, in place of one
character in the text (the
"{"), none were printed, the
print line will be one
character short of the right
margin.
```

INCLUDE FILE

This is another dot command that adds versatility to the Formatter. The command could look like .IF DSK1.RESUME2. When the Text Formatter encounters such a command, it prints the contents of that disk file too. The command can be at the beginning, the end or in the middle of the main file. There is no limit to the number of IFs used in the main file but IFs cannot be chained, i.e. a file that has itself been IFfed cannot have an IF command in it. Suppose you have done up a review that occupies 4 disk files named REVIEW1 to REVIEW4. Then to format them what you can do is to create another file to print out the whole review such as:

```
.CO Review:- The Storm King=
.CO Date :- 23 March, 1991=
.LM10;RM70;IN+8;FI;AD
.HE^^^^^^^^^^^@THE^STORM^KING=
.FO^^^^^^^^^^^^^^^^^Page^%=
.IF DSK1.REVIEW1=
.IF DSK1.REVIEW2=
.IF DSK1.REVIEW3=
.IF DSK1.REVIEW4=
```

A few more dot commands have cropped up here.

COMMENT

The .CO flags a comment just for the benefit of the reader. The whole line is ignored by the Formatter.

HEADER

.HE is the dot command that produces a heading on each page printed. The header is placed on the first line on the page and the text begins immediately on the next line. In the above example, the title, THE^STORM^KING , would be printed at the top of each page. The eleven circumflexes forces the title to be spaced over 11 positions from the indent position and the @ ensures that the heading is overstruck four times. Reusing the command, .HE, without anything after it cancels any previous header command. If wording follows a new .HE, the new one will be printed.

FOOTER

.FO ensures that a footer is printed at the bottom of each page just after a blank line. The dot command can be followed by any text to be printed and/or the % character if required. The % instructs the Formatter to print consecutive page numbers. The example above will print both the word "Page" as well as its number. Likewise, page numbers can also be included in headers.

It seems that the Funnelweb formatter prints out three lines less than the .PL command setting. On a setting of 60 lines per page, for example, the format printed is:

```
1 line either header or blank.
2 blank lines
52 lines of text.
1 line blank.
1 line either footer or blank.
```

Concerning page numbers in headers or footers, what if we want to start numbering the pages from something other than one or even skip a page number somewhere where we intend to use a page for illustration purposes? Well, there is another command to take care of that.

PAGE NUMBER SET AND RESET

.PA followed by a number sets header or footer pages to begin from that number. Relative values such as +2 or -1 can also be used to reset page numbers.

********** END OF ARTICLE **********

Disk File Formats

by Ross Mudie

* DISPLAY FIXED 80 (UNCOMPRESSED) tagged object code may be loaded by option 3 using E/A, option 1 using Mini Memory or using CALL LOAD in TI BASIC with either the E/A or MM modules. It can be ABSOLUTE or RELOCATABLE. The Absolute code must always be loaded at the same place in memory while Relocatable code can be loaded anywhere. If the Tagged Object has references to other files or subroutines they will be resolved by the loader, except in the case of the XB loader. If source code does not contain an AORG directive then the code will be, by default, relocatable.

* COMPRESSED TAGGED OBJECT code is like Tagged except that the program data is saved in bytes allowing it to load faster. It contains characters outside the printable ASCII range and cannot be modified by the E/A editor. Compressed object files are created by using the C option with the assembler. They are NOT loadable by the X/B loader, however they are loadable by basic under E/A and E/A option 3 etc.

* MEMORY IMAGE format is the most compact and the fastest loading of Assembly programs and can be stored on disk or cassette. It is identified as a PROGRAM file in a disk catalog and can be loaded with option 5 using E/A, or option 3 using TI-Writer. Please note that the screen will go blank and must be turned back on by the program itself after loading is complete. Memory Image files are produced using the SAVE utility on the E/A disk "B". Memory Image files like BASIC programs can be accessed from/to any I/O device with a single I/O call. That is why they load so fast.

There is a size restriction for MEMORY IMAGE FILES OF 8192 BYTES, (hex 2000), although the E/A the TI/WRITER Modules will load multiple Memory Image files to make a larger program. The loader does this by looking for files after the initial file is loaded whose filename is similar except for the last character which is incremented by one. EXAMPLE: The file GAME is loaded. The loader then looks for GAMF, GAMG etc.,if such files are required due to program size.

MEMORY IMAGE assembly files have a 3 word header followed by the data to be placed in memory as follows:

1) The first word is a 'FLAG'. If it is not 0 (zero) i.e. >FFFF then this file is not the last in a multi-file program. For example, if the flag for GAME is >FFFF then there HAS to be at least a file named GAMF, etc.

2) This word is the length of the Memory Image file in bytes, including the six byte header. The largest value here is >2000.

3) This word is the CPU RAM address where the file is to be loaded. Execution always begins at the first byte of the first segment loaded. o

THANKS TIsHUG

TI-Bits Number 5

by Jim Swedlow, CA USA

[This article originally appeared in the User Group of Orange County, California ROM]

DISPLAY VARIABLE 80 FILES-MULTIPLAN AND TI WRITER

The DV80 file is TI'S workhorse. TI Writer uses this format. If you open a file without specifying a type <OPEN #1:"DSK1.MYFILE">, it will be DV80. Assembly language source code files are DV80. This month we will cover some interesting aspects of these files as they are used by TI Writer and Multiplan.

First, you can save a Multiplan spreadsheet as a DV80 file on disk. Then, later, you can use that DV80 file for printing or for merging into a TI Writer file. You choose Print and then File. You must be careful to use a different file name than the one you used to save your spreadsheet as, unlike Transfer Save, Multiplan does not warn you if you are about to overwrite an existing file.

Just as when printing on a printer, you can control the margins and page format with Print Margin. One of the items that Print Margin lets you set is Print Width. If you set this to a number greater than 80, Multiplan will write a DV80 file wherein each record is longer than 80 characters.

Should you attempt to read such a file with a BASIC program, your system will produce a strange error code and lock up. Apparently the folks at TI thought that a DV80 file could not have a record longer than 80 characters so their error handling language does not consider that possibility.

TI Writer, however, will read this illegal file. It will only input the first 80 characters in each record but it is just about the only way to access the file (another is a disk sector editor).

Incidentally, TI Writer is very forgiving when reading files. More than once I have used TI Writer on a file with a glitch that prevented me from reading it. First I loaded the file into the Text Editor and then I saved the file back to disk. This process can remove a glitch.

QUOTES OF THE MONTH

"For those who like this kind of a book, this is the kind of a book they will like".

---A book review by A. Lincoln

"Knowledge comes but wisdom lingers."

---Tennyson

TWO TI WRITER TIPS

The Formatter makes sure that you have two spaces after each period. This can cause such strange things as: Mr. Smith
1023 N. Fargo Street

These extra spaces jump off the page to the reader as simply wrong. The easiest way I have found to solve this is to use the ^ sign to control the spacing. Mr.^Smith will print with just one space as will 1023 N.^Fargo Street.

The other tip concerns writing a on-disk note using the Editor. You might be writing some documentation or a disk-letter. If you save your final version to disk using Save File, the last record will contain the margin and tab information and will cause the final print line to have strange characters. The solution is to save your final version using Print File. Just enter the Disk File name and your on disk file will have only your text.

WORD OF THE MONTH

AVATAR - the descent of a deity to earth in an incarnate form; the incarnation of a god; any embodiment or manifestation of an abstract quality, attitude, concept or principle in a person.

"[His] piano teacher . . . was reportedly an avatar of the romantic giants of the 19th century."

A TI RESOURCE

Looking for a program to do something but you cannot find one that meets you needs? The Amnion Helpline Free Access Library is one of the largest public domain collections for the TI. To quote: "send me a note telling me as specifically as possible what you want. . . . I will go through the library and extract the programs that seem to fit your needs and send them to you. Naturally, the more specific the request, the better I can help."

This is a non-profit effort. For more information and current prices, write to: Amnion Helpline, 116 Carl Street, San Francisco, CA 94117. Be sure and send a self addressed stamped envelope (SASE). They will send you general information about the Helpline and answer your inquiries. o

THANKS ROM

WORD PROCESSING
By George Clark

[This article is a piece of a longer ROM article by George, in which he talks about using TIW/FW/Clone to prepare his address lists. He uses 6 lines per each even if many lines are blank. He tells how to print out the lists for use in conjunction with TIPS images. This is I think, is a very useful part, and so I reproduced it again.]

Use FS to find the particular label and enter "PF" ... now CHANGE the PIO on the command line by inserting the line numbers for the selected address.

Eg. the command line could read "116 121 PIO" ... that's for Earl's address in my own listing ... and press ENTER.

For convenience I have saved my addresses in three files A/ADDS, C/ADDS and O/ADDS for American, Canadian and Overseas listings.

Once set up this system is fast and simple to use ... suits me fine ... SIMPLE!

Some sophisticated programs include the 'phone number, birthdays etc. Mine does not, however I do have complete Birthday/Anniversary listings by date and by first name in my WP files and I have an abbreviated 'phone listing in a small plastic envelope by each 'phone in my house ... using condensed print produces an attractive print out.

It lists frequently called friends, Doctors, Airlines and Services etc.

On my refrigerator door there is a WP created listing of STORE DISCOUNT COUPONS which is referred to prior to each shopping expedition ... it is easily updated monthly, or more frequently if necessary.

It has columns for Product, Brand, Size or type, Value, Expire date and Quantity (of coupons).

As a Retiree of modest means I have no need for a Spread Sheet program, but I keep a columnar listing of my Municipal Taxes, my Income and Income Taxes all neatly detailed since 1982.

For my purposes a simple pocket calculator mashes the figures to be entered!

As I am on medication for HBP and Arthritis I have eight prescriptions to be filled monthly so I have a very neat Wallet-sized listing of them by number and description, usage, the name and 'phone numbers of both the Doctors and the Drug Store where they are filled.

If my luggage arrives in Timbuktu whilst I am still in North America I can easily get re-fills with the information detailed ... using Condensed WITH Super-script makes a very neat list for Wallet use.

Similarly, I have a Wallet sized listing of my medical history.

My Word Processor has also produced my listing of Household Inventory and SO many other useful lists and documents.

How did I ever live without my TI-99/4A ...

Oh! Yes! Of course I wrote this with it, too!

The 2 columns were printed using Earl's MULTIPRINT (Thanks again, Earl!).

I have just installed a Horizon RAM4000 card (512K) and am thrilled with it and the speed with which I can load, locate and print an address, etc!

The Ole Gray Mare sure ain't dead by a long shot!

THANKS MID SOUTH

LASER PRINTERS

By Gary W. Cox

Ever wonder how a laser printer works? The principle on how laser printers work is very similar to the technology used in copy machines as a laser printer is actually just a fancy copy machine that takes input not from a piece of paper but from a computer.

The basic operation of a laser printer starts with the printer accepting input from the computer. A formatter board (circuit board responsible for forming the image) inside of the laser printer interprets the input into a format that it needs in order to send instructions to the laser to produce the image. A control board (often called a DC controller) controls the sequences of operations including the motor, rollers, laser etc...

When the printer starts, the laser shoots a beam of light (usually invisible light) onto a photo sensitive drum (light sensitive drum) with the laser beam scanning from one side to the other much like we write from left to right on a piece of paper. The laser beam is turned on and off as it scans across one line of the photo drum in order to produce charged areas on the photo sensitive drum. These charged areas make up the dots which will make up part of an image. This image forming process works much the same way as a dot matrix printer works placing dots on the page to make up an image but the resolution (DPI) on a laser printer is far superior to any dot matrix printer. So each time the beam is on that is considered a dot and where the beam doesn't shine (when the beam is off) that is a blank spot. The combination of dots across multiple lines make up an image.

The photo sensitive drum constantly rotates as the laser places "imaginary" dots on the drum but in actuality the laser charges (like static electricity) any place on the drum that it hits. As the drum rotates past the toner (dry ink) reservoir the toner is attracted to any charged places on the drum. The photo drum, which is located close to the paper, is moving through the printer at the same rate that the photo drum is turning. With the drum on top and the paper below it is necessary to move that toner from the drum to the paper. So underneath the paper is a charged wire (corona wire) which attracts the toner off of the drum onto the paper keeping the same positions of the dots which make up the image. Therefore, while the laser is writing to one side of the drum the other side is placing the toner onto the paper. Erase lamps then erase the charge on the photo sensitive drum as it rotates before the laser hits the drum again with another charge.

After all of the image is transferred from the drum to the paper the paper then moves through a "fusing" or "fixing" assembly where the paper is squeezed between two rollers one of which is very hot. This heat causes the toner to bond onto the paper as before the paper reached the fusing assembly the toner was just laying on the paper (at that point the toner can be brushed off with your hand). So after the paper runs through the fusing assembly it is bonded onto the paper and the paper then exits out of the printer and the result is the image on the page.

The different resolutions of laser printers, which usually range between 300 to 1000 DPI (dots per inch), correspond to the type formatter board used as well as the type laser... The higher the resolution the better quality of the image. While a copy machine duplicates an existing image a laser printer must form that image on it's own thus the reason for the laser portion of the printer but beyond the image formation circuitry a laser printer is just a copy machine!

A variety of laser printer manufacturers exist but the engine's used in the printer are made only by a few companies. The engine is what you might consider the portion of the printer which is like a copy machine. In fact, I have seen some copy machines which look the same inside as some laser printers because those copy machines are using the same engine as some laser printers. Ricoh and Cannon are probably the most well known manufacturers with Cannon having by far the largest portion of the market. However, you have probably not seen many laser printers with the name Cannon on it. What you do see is many manufacturers using the Cannon engine and placing their own style case around it as well as installing their own interface and formatter board. So a Hewlett Packard LaserJet II and III as well as some Apple Laserwriters all use the same engine with most of the main parts being interchangeable. So while the printer may say one thing on the outside, much of the inside may be the same. This only apply to Cannon based laser printers, non Cannon engines are different although the basic principle of operation is the same.

The laser printers which use the Cannon engine are in my opinion the best as they all use a system whereby the main parts of the image formation process are located in a cartridge ("toner cartridge") thus it is not necessary for the user to fool with filling toner (messy) and replacing photo drums. All these items are replaced when the toner cartridge is replaced. Cannon laser printers are usually easy to maintain and can easily be repaired. I know I repair them! Plus they usually provide for good, fast and reliable print.

So in closing, a laser printer works by first receiving data from the computer, it uses a formatter board to produce the image that it tells the laser to create. The laser creates the image by charging areas of a photo sensitive drum. These areas on the photo sensitive drum attract toner. This toner is then attracted to the paper via a charged wire underneath the paper of which the paper is constantly moving through the printer at a constant rate while all of this is happening. The toner is then fused onto the paper using pressure rollers and heat which then produce the output that you see coming out of the printer. Actually a lot more is involved in the operation of a laser printer but this is the basics of how a laser printer works!

THANKS MID SOUTH

CALL "WAITING" REVISITED

by Glenn Bernasek
from TI-CHIPS, Cleveland, Ohio

I was on the FREE-NET and got blown off. My son-in-law was telecommunicating with a customer, and he got blown off! Why? We've both got CALL WAITING service on our phones. When a call comes in while we're on line, Call Waiting emits a special tone that the computers either cannot understand or interpret. In either case, the host computer hangs up! What a pain!!!

This lead me to dig up an old articel by Mel Myhre, downloaded by Terry Vacha, that appeared in the October 1987 newsletter of the Cleveland Area TI-99/4A User Groups Newsletter titled DISABLE "CALL WAITING". What follows is a reprint of Mel's and Terry's article followed by an endorsement by yours truely.

"I am unable to verify the following info which I found on Compuserve regarding "Call Waiting", because I do not have the service myself. (I prefer to get as few calls as possible, and sure don't want two callers at once.) However, I offer the following By Mel Myhre, to those who have modems and the plague called "Call Waiting". The rest is a direct quote."

"I use the following and it has always worked for me: Preface the number with "1170,". The "1170" tells the phone company to turn off the call waiting and any one who calls the number will get a busy signal. The comma is a pause for any Hays cpmpatable modem as to give the phone company time to react and stabilize the line. Try "1170 manually and you will hear approximately 3 tone bursts and then a normal dial tone after a slight pause. Call waiting is restored as soon as the present connection / call is terminated by the phone company computer so it must be reaccomplished for every number dialed. The Phone Files I use are all prefaced by "1170,". I travel estensively and it has always worked for me in the U.S. (they don't have such things overseas yet.)"

And now my endorsement. I tried the manual "1170,", and got the 3 tone bursts followed by a dial tone. So far - so good. I then fired up TELCO and called up Auto Dailer, I retyped the FREE-NET number to read "1170,368-3888".

The big experiment. I got on line with Free-Net, and while the Administration menu was waiting for my selection, I dialed the phone number of my daughter's phone (she has her own line). Well, what do you know? I GOT A BUSY SIGNAL AND MY CONNECTION WAS UNDISTURBED! All worked as advertised. Just don't forget to include the COMMA.

THANKS BUG NEWS

PROGRAM OF THE MONTH

by Bob August

This months program is for my grandson, to help him with his spelling words at school.

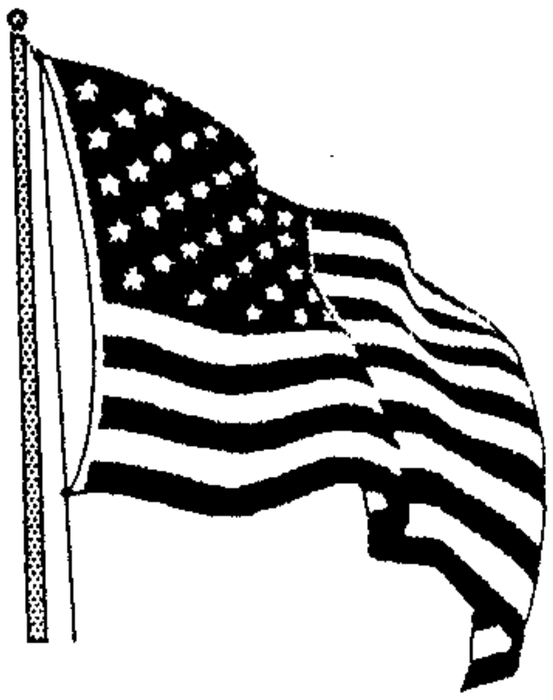
You can enter up to 15 words and the computer will show you the word and spell it for you. You spell along with the computer and in that way learn to spell the words.

If you would like a program to do something for you, let me know and I will write it for you and share it with our members.

The program is in Extended Basic because we used sprites.

Hope you enjoy.

```
100 ! COMPUTER SPELL
110 ! IN TI/EXTENDED BASIC
120 ! BY R.W. AUGUST
130 SKIP=0
140 DISPLAY AT(6,5)ERASE ALL
:"<< COMPUTER SPELL >>": : :
 :"PRESS:": :TAB(5);"1 - TO
ENTER WORDS"
150 DISPLAY AT(14,5):"2 - TO
 SPELL WORDS": :TAB(5);"3 -
TO QUIT"
160 CALL KEY(0,K,S):: IF S=0
 OR K<49 OR K>51 THEN 160 ::
 CALL CLEAR :: ON K-48 GOTO
1000,2000,3000
1000 ! **ENTER WORDS SECTION
1010 DISPLAY AT(3,1):"HOW MA
NY WORDS DO YOU WISH":"TO EN
TER: 1-15 10" :: ACCEPT AT(4
,16)SIZE(-2):N
1020 FOR I=1 TO N :: DISPLAY
 AT(5+I,1):"#";STR$(I);" - "
;TAB(7);W$(I):: ACCEPT AT(5+
I,7)SIZE(-20):W$(I):: NEXT I
1030 DISPLAY AT(23,1):"ARE T
HE ABOVE WORDS RIGHT":"Yes o
r No Y" :: ACCEPT AT(24,11)S
IZE(-1)VALIDATE("YyNn"):YN$
1040 IF YN$="N" OR YN$="n" T
HEN 1020 ELSE 1050
1050 OPEN #1:"DSK1.WORDS" ::
 PRINT #1:N :: SKIP=1
1060 FOR I=1 TO N :: PRINT #
1:W$(I):: NEXT I
1070 CLOSE #1 :: GOTO 140
2000 ! **SPEAK WORDS SECTION
2010 DISPLAY AT(3,1)BEEP:"PR
ESS THE SPACE BAR WHEN": :"Y
OU ARE READY TO START"
2020 CALL KEY(0,K,S):: IF K<
>32 THEN 2020
2030 IF SKIP=1 THEN 2060 ELS
E OPEN #1:"DSK1.WORDS" :: IN
PUT #1:N
2040 FOR I=1 TO N :: INPUT #
1:W$(I):: NEXT I
2050 CLOSE #1
2060 FOR I=1 TO N :: CALL SA
Y("SPELL"):: DISPLAY AT(8,1)
:"SPELL ->";TAB(10);W$(I)::
CALL MAGNIFY(2):: L=LEN(W$(I
))
2070 FOR S=1 TO L :: T$=SEG$
(W$(I),S,1):: CALL SPRITE(#1
,ASC(T$),2,100,120):: CALL S
AY(T$):: NEXT S
2080 CALL DELSPRITE(#1):: FO
R DELAY=1 TO 500 :: NEXT DEL
AY :: NEXT I
2090 SKIP=1 :: GOTO 140
3000 ! ** QUIT PROGRAM
3010 DISPLAY AT(12,2):"DO YO
U REALY WANT TO QUIT?": :" Y
es or No Y" :: ACCEPT AT(14,
12)SIZE(-1)VALIDATE("YyNy"):
YN$
3020 IF YN$="N" OR YN$="n" T
HEN 140
3030 DISPLAY AT(12,5)ERASE A
LL:"GOOD TALKING TO YOU"
3040 CALL SAY("GOODBYE")
3050 END
```



THANKS TIsHUG

SECURITY ON RAMdisks

Retyped by Loren West

This comes from William Berendts, president of the Ozark 99ers User Group, Springfield, Missouri. He writes:

RAMID is a simple 5 line program written to prevent unauthorized entry to your Horizon RAMdisk. Children, grandchildren and others are oftern drawn to the mystique of a computer. Ordinaily, they cannot do much harm, unless you have your system autoload your RAMdisk on power-up. Although written for use with the Horizon RAMdisk, you may be able to adapt it for use with other RAMdisks as well. Not having access to other RAMdisks prevents me from testing it on others.

The programm is named RAMID. Entering the proper ID will result in your RAMdisk, or any disk protected by RAMID, being made avaliable for use.

If your system autoloads and untrained hands - sometimes even trained hands and minds - hit the wrong keys, havoc breaks loose and you can lose everything stored in the RAMdisk's memory.

RAMID might prevent that by requiring anyone firing up the system to enter an identification code before the RAMdisk menu is loaded. An incorrect identification will result in the following message displayed on the screen: "You are not authorized entry to this computer." It is displayed as an endless loop.

For safety's sake, keep an unprotected copy of RAMID on a floppy, stored in your archive file. load the program into memory and enter your personal identification. This can be anything - a name, pet name, social security number, address, and so on - into line 1, replacing the statement "your code." If you wish to give another user access to your system under his own personal identification, enter that user's personal code into line 1, replacing the statement "second code." If only one code is used, then delete the second half of line 1 (AC2$="SECOND CODE") and in line 2, delete OR Q$=AC2$. If you you intend to use RAMID to protect a floppy disk, enter in line 2 RUN "DISK*.LOAD - FILENAME" in place of DELETE "MENU". If you are protecting your RAMdisk, do not replace DELETE "MENU".

After you have saved the personalized program back to your archive floppy, test it by typing RUN and pressing Enter. Enter an incorrect ID. Your RAM menu (or disk) should not load and the access denied message should flash on the screen, along with a sound to alert the system operator. If you attempt to stop the program by pressing FCTN 4 the loop will continue. The only to stop the program is to turn off the console, or pressing FCTN +.

So far so good. Now load the RAMID program into memory again. This time enter your correct ID. This time your RAMdisk menu should come to the screen, or the disk drive you wish to access will start, depending on the entry made in line 2.

If you wish to RAMID to prevent access to your Horizon RAMdisk and every-thing has worked properly, load your RAMdisk Operating System into memory and reconfigure your RAMdisk by editing the ROS in the following manner: First, move the file ID "4 MENU" to the next empty "U" position. Then enter "4 RAMID" into the position formerly occupied by "4 MENU". Save your altered ROS to another disk or under another filename to prevent changing your original ROS.

After changing your ROS, load your personalized RAMID program into memory and save it to your RAMdisk as a protected file by typing the following: SAVE DSK*.RAMID, PROTECTED

The program can be loaded and run, however, it cannot be listed. This prevents an unauthorised user from discovering the personal ID in line 1.

When all is loaded, run your system as you normally would. If your system loads on power-up, the line requesting your ID should be displayed and you need only to follow through as discribed above.

If you decide to change your ID, simply load the unprotected RAMID program from your archive disk, change the ID in line 1 and then save it to your RAMdisk as a protected file, using the filename RAMID.

If you wish to protect a specific disk, save RAMID to the disk under the name "LOAD". Obviously, any other load program on the disk would have to be renamed to avoid overwriting. I have found that just changing the name of the original load program by adding a number to it is easy - LOAD2, for example. Make sure line 2 of RAMID reflects the changed name, i.e. "RUN DSK*.LOAD2".

There is one drawback to the use of RAMID - if any program being used is written in other than Extended BASIC, the request for an ID will be displayed when you exit the program. If the programs are written in XBASIC, it might be necessary to make the appropriate changes to display the main menu without starting over. Generally, using DELETE "MENU" in place of END will get you back to the RAMdisk menu without going through RAMID .If using a disk replace END with "RUN DSK*.LOAD2", or whatever filename you have given the original load program. Programs written in other languages will be more problem-atical, depending on the users expertise in those languages.

```
    100     AC1$="123"     ::
AC2$="456"
    110 DISPLAY AT(8,4)ERASE
ALL:"ENTER YOUR ACCESS CODE:"
:: ON BREAK NEXT ::  ACCEP  T
AT(12,5):Q$  :: ON BREAK NEXT
:: IF Q$=AC1$ OR Q$=AC2$ THEN
RUN "DSK1.LOAD1"
    120  ON  BREAK  NEXT  ::
CALL
SOUND(500,110,0,130,0,196,0)::
ON BREAK NEXT :: CALL C LEAR
    130 ON BREAK NEXT :: FOR
X=1  TO 8 :: ON BREAK NEXT ::
DISPLAY AT(10,4):"YOU ARE NOT
AUTHORISED":       :TAB(3);"TO
ACCESS THIS COMPUTER!" ::  ON
BREAK NEXT :: NEXT X
    140  CALL SCREEN(2):: ON
BREAK NEXT :: GOTO 140
```

EDITORS NOTE.

I have tried this program on a floppy disk and works quite well.

Next month, if room permits on these pages I will print a program that I wrote for my children, it is also security coded, not quit as sufiсated but more interisting for the children when they put in the wrong code.

WHAT THE LEDs CAN TELL YOU ABOUT LOCKUP

By Glenn Burnasek, TI-CHIPS
From MUNCH, 4/94

THANKS GREAT LAKES

The dreaded lockup is usually the result of a poor or missing electrical connection somewhere in the computer system.

Symptoms of a lockup can be a frozen cursor, a garbage screen or strange colors. In any case, no matter how much you pound on the keyboard, NOTHING HAPPENS!

As we all know, the computer has provided the environment for the creation of another addition to MURPHEY'S LAW. It goes something like this - "A computer lockup will occur at the worst time and just after a great amount of work and effort has been expended."

(You DID remember to save to disk or printer every 20 minutes or so, didn't you?)

However, no matter how traumatic and frustrating a lockup is, a lot can be learned from the symptoms. What happened and when it happened and especially the status of the system LEDs.

Common lockup times are:

1. Using a wordprocessor such as TI-Writer.

2. Calling a disk drive (RAMdisk included) to read or write.

3. Sending a signal to a printer or modem.

4. Just turning on the system.

Most of those lockups can be analyzed by observing the LED light for that operation. First of all let's determine what is expected, and conversely not expected, for the operation of the system LEDs.

1. The TI-99/4A (console) has a red power LED indicator right up front at the lower right corner. This LED should be on when the computer is on. Simple, huh? The same goes for the printer which has a POWER ON light on its' panel.

2.If you have a peripheral expansion box (PEB) in your system, then the following LEDs should respond as described.

a. The PEB card LED (the light farthest to the left) should be lit as long as the PEB box is turned on. A slight flickering is normal when the TI is sending or receiving commands to or from the PEB. No light - NOTHING WORKS.

b. The 32k memory expansion card, in the PEB, has an LED that is lit all the time when the PEB box is ON. A simple trouble-shooting test is to type "SIZE" and press ENTER. If the 32K card is working, you will get "24400 BYTES OF PROGRAM SPACE FREE".

c. The floppy disk controller card (FDC), i.e. Corcomp, will have an LED that remains ON ONLY WHEN THE CORCOMP INTRO SCREEN IS ACTIVE. Otherwise this LED should blink only when commands are being sent to or received from the drive controller and the disk drives. The LED on each floppy drive should only be on when that drive is working. If the drive controller card LED doesn't turn off when the screen is gone, then the card connection is suspect. If the drive light is on ALL the time, the cable connector is on backwards.

d. The RS232 card, i.e. Corcomp, LED should NEVER be ON all the time! This LED flashes or flickers ONLY when the card is sending or receiving commands. A poor connection will cause this LED to glow continuously.

e. The RAMdisk LED, should NEVER be lit all the time. This LED flashes ONLY when the RAMdisk is being addressed.

So the next time your system decides to go to never-never land, take note of what you were trying to do at the time and what the LEDs were telling you.

Remember, a computer will "crash" or lockup only because it was trying to do a job it couldn't complete, and it will keep on trying until it is told to stop by either error trapping or a POWER SHUT-DOWN. A computer is one of the most faithful machines ever devised by man. And it is this faithfulness that causes the computer to concentrate on the PRESENT command only, until it is completed. This is why the keyboard becomes inoperative during a lockup. The computer is still working, but it's working on an impossible assignment.

Once again, the odds are that the lockup, if not caused by an "endless loop" in the program, is the result of a missing or poor electrical connection.

When I say, "Clean and secure all card edge connectors, I mean ALL card edge connectors (modules included".

WHY DSKU REFUSES TO BOOT FW

DSKU v 4.2 was distributed by the Lima User Group with FW v4.40 and v4.31. There is an item on the main DSKU menu that says "Load FW". It usually doesn't work. The reason is that DSKU searches the drive you specify for a file named UTIL1 which is what the main Funnelweb title used to be called. The main Funnelweb file is now called FW.

It is easy to modify DSKU to boot FW every time you ask DSKU to "Load FW". Here's how. Use Fullelweb's Disk Review or other sector editor to search the third DSKU file (named either DW or DSKW for the ASCII text "UTIL1". You will find "DSK1.UTIL1". Change the UTIL1 to "FW" and put blank spaces over the IL1. Then change the screen display to Hex (CTRL/H if using Disk Review) and move the cursor to the left to the first appearance of "0A". This is at byte >DD in my file, DW. Change the 0A to 07 and write these changes back to disk (CTRL/W and then CTRL/A if using Disk Review). This change shortens the length of the text the computer expects to find since DSK1.FW is shorter than DSK1.UTIL1. DSKU will now properly boot Funnelweb when you select "Load FW" from DSKU's main menu.

By Charles Good, Lima User Group
Reprinted from Bytemonger.

THANKS LONG ISLAND

FUNNELWEB TIP

By F.W. AYLSTOCK

We all have seen Funnelweb working and have to admit that it is a wonderful word processing program. It has been called a great BOOT program, then we received version 5.

Some of the TI world have GENEVES or 80 column processers so we have enjoyed the latest version for over 1 1/2 years.

Some of us only loaded up the new program and did not read the new docs to find out all that was included in the new program. So let me tell you a little story.

I will try to explain one of the new programs that is included in the new version.

STORY TIME!!

I was trying to draw a diagram with the word processor and as we have in the past used dashes and underlines and other of the keyboard symbols.

I showed the final program to our newsletter editor and as he has a, pardon the expression, IBM. After I had left he operated on my program in the clone and showed me the results and how the program worked. The clone did a fine job but I felt the old reliable could do the same thing.

I went home and remembered that I had seen some reference to IBM graphics and a lot of the news letters have had a lay out of the graphics as you could get from the TI.

I tried to get the graphics to work but to no avail. Then I remembered that I had a copy of the docs that CHARLES GOOD of the LIMA group had written and I got them out and lo and behold there was the process and key presses needed to get the graphics.

You have to have a printer that has the IBM graphics set. Then set the dip switches as needed to access the graphics. CheCK your printer manual.

I will detail the key presses but remember that you can not use the formatter.

TO LOAD GRAPHICS.

1:LOAD THE FUNNELWEB TO THE SCREEN WITH TEXT EDITOR AT THE TOP.

2:PRESS NO.1 AND AT THE SAME TIME PRESS THE SPACE BAR AND HOLD IT DOWN UNTIL YOU SEE A NEW MENU.

3:PRESS 1(wordprocessing) THEN ENTER

4:PRESS 3(all chars) THEN PRESS ENTER

5:PRESS 1(default) THEN PRESS ENTER

You are now in the graphics access mode.

When you want the graphics press CONTROL AND COMMA at the same time.

When you wish to leave the graphics and return to the standard character set press CONTROL AND COMMA AGAIN.
REPEAT THIS PROCESS AS NEEDED.

MEETING DATES FOR 1994-1995

3RD SATURDAY

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11 JUL 1994
20 AUG 1994
17 SEP 1994
15 OCT 1994
19 NOV 1994
17 DEC 1994
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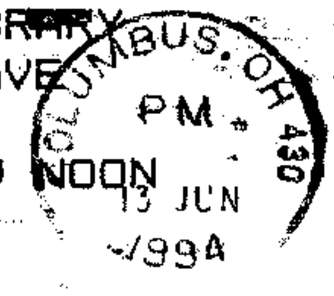
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