

OUR NEXT MEETING will be on Friday,

JULY 15, 1983 at 7:30 pm

PLACE: KEY BANK BLDG.

SW corner of Rt. 20 and Rt. 155

THE AUGUST MEETING will be on Friday,

AUGUST 19, 1983 at 7:30 pm

PLACE: KEY BANK BLDG.

SW corner of Rt. 20 and Rt. 155

Both meetings will include more of Jon Daggetts informative talks!

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## MINI MEMORY

In my last article I gave a brief summary of what the Mini-Memory command module can do. In this article I would like to compare it to the Editor/Assembler in relation to assembly language programming.

One advantage to using the Mini-Memory for assembly language development is that the only thing required is the console and a TV (or monitor). There is no need for the 32K memory expansion or disk system as is required for the Editor/Assembler. This is a great reduction in cost. The Mini-Memory lists for \$99.95 and the Editor/Assembler with the required peripherals would be well over \$800.

Now let's look at the actual assemblers. The Editor/Assembler comes with an assembler which comes on a disk. With this system, you write your "source" code, save it on disk, then "assemble" it into "object" code. The Mini-Memory comes with a Line-By-Line Assembler, which immediately converts your assembly code into machine code as you type it. You can actually see the machine code and where it is in memory, the instant you type it in. Sounds nice, doesn't it? No, not really. With this type of assembling process, you lose your "source" code. This means that any major changes to your program will require typing in some or all of the program again. With the Editor/Assembler, editing is a very simple and easy-to-use set of "function" keys and command instructions.

There are many other disadvantages to using the Mini-Assembler. One is in the naming of your program. In the "big" assembler, you just DEFINE your program at the beginning of the program. The assembler takes care of it from there. In the Mini-assembler, you must "peek" into memory to see the present location of the Ref/Def Table, possibly change that value, then "poke" in the name of your program, and it's starting point into this table. After getting the hang of this, it really isn't that bad, but for you beginners, it will take a while to get used to it. (or learn some tricks to get around it)

As mentioned in the last article, the Mini-Assembler is actually loaded into the same memory in which you write your assembly program. Therefore, you do not really have 4K of space to write your program. We have discovered that there are really only about 800 bytes of space to construct your program. 4K programs may be run, but not written. One way around this is to buy a 3rd Party Assembler program from one of the advertisers in 99'er Magazine. There are many available.

The Mini-Assembler's instruction set is also smaller than that of the "big" assembler. This limits you somewhat in your flexibility of coding your program. You also may only use labels which are 2 characters in length, and special precautions must be made as to how many labels you use. This requires you to do a lot of "book work" which the big assembler takes care of for you.

In conclusion, I would say that the Mini-Memory Cartridge would be a good investment for someone starting out with a small computer system, who wants to dabble into 9900 Assembly language. If you are a serious programmer, who wants to put out high quality programs which are of a larger size than 800 bytes, then I would recommend sinking the money into a fully-blown system. The ease of use and flexibility of the Editor/Assembler far surpasses that of the Mini-Memory. But, for those of you now scared of assembly language, don't be! It is an extremely fast and versatile language.

For Example:

- 1) In one benchmark test, an Extended Basic program clocked in at about 2 minutes and 30 seconds, where the same program written in Assembly ran in about 1/2 second. WOW!
- 2) Instead of being limited to about 111 graphic characters, you now have access to 256 graphic characters, as well as 128 characters set aside just for use with sprites. This allows for large graphic screens to be produced with ease.
- 3) With Assembly language, you may now access 3 different graphic modes of the computer.
  - a) TEXT MODE (40 column screen, text only)
  - b) MULTICOLOR MODE (turns the screen into 3072 boxes each of which may be individually colored.
  - c) BIT-MAP MODE (allows independent character definitions for each of the 768 positions on the screen, and much more versatile color information to be used.

Is Assembly Language for you? - How serious are you about programming?

*Jon Daggett*

## HOW GOOD IS TI WRITER?

In a review of another word processing program, The Final Word, in the June Interface Age, Dona Meilach says: "I often hear complaints that WordStar (the most popular word processing program) requires learning too many two-keystroke commands. Unfortunately, many commands in the Final Word require three or more keystrokes in succession to perform simple functions." Here is a major plus for TI WRITER: most functions require one keystroke, and those which require two are mnemonic, for example SH calls up the search for a string subprogram. Commands are simple, and are kept in front of you, either in the small menu at the top of the screen or on the strip inserted at the top of the keyboard.

What will TI WRITER do? It performs almost all the functions common to other popular word or text processing programs: set margins, set tabs, insert into text, erase a character or the rest of a line or an entire line, search for a particular string and replace it with another if desired, etc. Moving text from one location to another, or duplicating lines of text at another location is made easy because lines are numbered (if desired).

In the review quoted above there is a complaint that it is not possible to move directly to the beginning or end of a document. TI WRITER does have this feature.

Two special features just now appearing in the newer and more sophisticated word processing programs are present in TI WRITER. First is the ability to recover from a mistake in editing. Suppose, for example, you erase a line and decide you want to keep it after all. Push the "oops" key, and it comes out of the buffer and is restored.

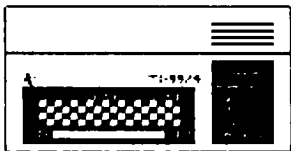
A second is the ability to work back and forth between a word processing program and other programs, for example a spread sheet program. You may transfer text and data between TI WRITER and Multiplan, the spread sheet program now available for the TI99/4A.

Equipment required to use the TI WRITER: disk drive, memory expansion, RS232, and a printer. The program supports both serial and parallel printers. While reformatting is not required before sending text to the printer, it may be done using a special formatting program, permitting all kinds of special instructions to the printer, including right hand justification.

What is wrong or missing in TI WRITER? There are no instructions for using graphics which are available on many printers. Anyone who discovers this could have a nice article in the 99'er. The principal deficiency is that the screen width is 40 characters. The screen is a window on an 80 character line. Friends who use WordStar on the Osborne I say you get use to the window. Maybe so, but a full 80 character screen line would be much preferable. One way around would be to set the right hand margin for 40, then the screen would hold still.

Finally documentation is good, and the price is reasonable. WordStar (for CP/M machines) lists at \$495 and The Final Word (for IBM PC) at \$300. TI WRITER lists for \$99.95.

Robert S. Burgess



FROM THE CONSOLE  
OF THE PRESIDENT

In recent days many of you have asked me about disk drives. In this months column I will try to answer most of the questions. First of all TI does not manufacture the drives it markets. Some of the ones I have seen have been built by Micro Peripherals Incorporated (MPI) or by Shugart. Those of you who get 99'ER magazine have seen many ads for drives by others than TI. As a rule drives purchased elsewhere will be more difficult to install then official TI drives, if for no other reason then the poorer instructions provided, ones supplied by TI are really quite detailed. Even with these excellent instructions, in my opinion it requires better than average mechanical skills to install a drive in the peripheral expansion box. It becomes many times harder for the begginer to install one with poor or no instructions. Another factor you can't ignore is what do you do WHEN it breaks? If you have the TI, the exchange center is not far away. When one purchased somewhere else breaks will you or I be able to find a repair center for it?

I currently have a double-sided Qume drive in my system and so far it seems to be working out very nicely. (Except one small mechanical problem a little epoxy fixed.) But, then again I earn my living repairing electronic equipment. The extra space on each diskette has been real handy, especially for work in assembly language where many programs used to take up more than a single diskette without an editor or an assembler. The Qume is also much quieter then the Shugart and is almost silent compared to the awful sounding MPI. For those of you who are interested I will have at least one of these drives in my system available for your inspection at the July meeting. At that time I will attempt to answer any Questions you might have about disk drives. (No, I don't know how to build a drive and controller for under \$1.98.)

Rich Lane

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\*\*\*\*\*BULLETIN BOARD\*\*\*\*\*

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For Sale: One old style RS232. Eight monthes old. \$125 will dicker.  
Call 867-5132 ask for RDN

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For Sale: Used Scotch ss/sd diskettes. Most less than one year old.  
\$2.00 each. Call Rich at 843-0637

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