

Welcome to the February/March edition of the Carolina 99/4A User's group newsletter. I am sorry for the delay, but other things needed to be finished. This newsletter will be the beginning of some new features that I hope will continue to be offered in future editions. However, if many of the features are to be successful they will need your help; I hope to see your letters soon. The new features that are having their first showing in this months newsletter are: Letters to the Editor/Question Answers, Shopping Around, Helpful Hints About Hardware, Debugging, and The Carolina Record Book. What will be found in this assortment of new features? Well we hope its what you have been waiting for in a newsletter. However, the best way to find out is to continue reading, so with that thought in mind I will stop tripping you up and let you dive in to this months newsletter.

James Rountree

PROGRAMMING TIPS, by Edwin Simpson
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In our January meetings, we had a brief discussion on determining the amount of free memory available. In addition to our discussion, Compute magazine has had several small articles on this subject. For those who missed out, or need a refresher, here are several methods for determining free memory:

METHOD ONE:  
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Use this one line program (or add it into your program), with "A" as a variable otherwise unused:

```
(line) 1 DIM A(1812)
```

then type in RUN and press <ENTER>. You will find that 1812 is the maximum value that can be used in 16K basic without getting a memory full statement. If you reduce "A's" dimension to 0 and still receive memory full statements, you are out of memory. the one line program establishes a numeric array, which occupies 8 bytes. If you multiply the 1812 used above by 8 bytes, you get 14,496 bytes, or just over 14K on the supposedly 16K machine. Remember, the dimension statement uses a little memory, and the computer itself uses some in control areas. If 906 is the maximum value you can use, you have about 1/2 of your memory left. (cont. next page)

PROGRAMMING TIPS (continued)
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METHOD TWO:  
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This is a two line program with "A" as an otherwise unused variable:

```
<line> 1 A=A+S  
2 GOSUB 1
```

Then type in RUN and press <enter>. After a few seconds a memory full statement will appear. The approximate number of free bytes remaining will appear on the screen.

METHOD THREE: (Extended Basic only.)
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No lines numbers are needed here. Just type in SIZE and press <ENTER>. The free memory will appear on the screen. Too bad it is not as easy in Basic.

\*THE METHODS ABOVE MAY NOT BE ENTIRELY ACCURATE, BUT THEY WILL GIVE YOU A GOOD ESTIMATE.

Remember -- some cartridges such as Extended Basic and Terminal Emulator II use up some of the memory. Hooking up the Disk System will also use up some of the memory. Although it is rare, occasionally a cassette based program will give you a memory full statement (or simply not load) with the Disk System hooked up, but will (load and) run when the Disk System is disconnected. If you wish to add TI'S 32K Memory Expansion, you need to have Extended Basic. The Basic built into your computer will not allow you to use expanded memory.

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LETTERS / QUESTION - ANSWERS:  
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I am sorry I do not have anything for this section of the newsletter, but there is little I can do until I get something to fill it up. I am waiting for your letters.

THE CAROLINA 99/4A NEWSLETTER
4601 KNIGHTBRIDGE RD.
GREENSBORO, N.C. 27405

REVIEW by Edwin Simpson

NUMBER BOWLING - Scott, Foresmann Company (Cartridge)

This is one of a series of math games developed by Scott Foresmann. It is designed for students in grades 6-8 and can be played by one or two people at three different skill levels. The first, or amateur level, involves practice with decimals. The pro level deals with fractions and mixed numbers. The champion level involves changing fractions to decimals and vice versa.

Each student is given a problem. If you solve it correctly by typing in the right answer, a bowling ball on the screen will knock down from 1 to 10 pins, depending on how long it took the student to answer. If the student misses the problem twice, or takes too long, he will not set any pins. After each student has had 10 problems, the total number of pins knocked down by each player is displayed on the screen and the winner is determined.

RECOMMENDATION

This can be a fun exercise to reinforce skills a student has recently learned. The colors and graphics add to the appeal of the program. It will be too difficult unless the student has been exposed to decimals and fractions, and it may be too easy for students that have mastered these skills. For the student who is having trouble, or just learning, it is very good.

HELPFUL HINTS: Hardware

During our January meeting the subject of hardware came up again and the usual question of what do I need, or what do I not need. This space of the newsletter will be set aside for any Helpful hints on Hardware. First of all I would like to repeat one of the helpful hints that was given last meeting. If you buy or have bought a TI 99/4A recently, then look to see if it is a 1983 (version 2.2). How will you know if it is a version 2.2? When you have hooked your TI up and you see the title screen that has the color bands at top and bottom of the screen, underneath the bottom color band it should have the copy right year and to the left of the date (if it is a version 2.2) there will be "VERSION 2.2". What does it mean if you have a version 2.2? It means that not all 3rd party software (non-TI) will work on your computer. However, do not go out and sell your TI, just try to be sure that any 3rd party software you buy is compatible with your computer.

James Rountree

STX-80

Star Micronics, Inc.

Price: \$199.00

Interface: Centronics Parallel

System Req:
Parallel Interface
Cable

The STX-80 printer from Star Micronics, Inc. is the first of a new generation of printers that offer a variety of features at a reasonable price. The STX-80 is an 80-column, thermal dot-matrix printer that prints 60 CPS. The print head is bi-directional, logic-seeking in the text mode and uni-directional in the dot-addressable and block graphics modes. The printer has the standard 96 character ASCII set, 51 international characters, and 64 block characters built-in. The dot-addressable graphic capability allows the printer to also function as a plotter and print user-defined characters. It also has enlarged print. This is what the "self-test" looks like:

!"#\$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMN O PQRSTUVWXYZ[\]^_`abcdefghijklmnop
qrstuvwxyz{|}~
*-----+-----x-----o-----/-----:-----;-----<-----=>-----?-----@-----A-----B-----C-----D-----E-----F-----G-----H-----I-----J-----K-----L-----M-----N-----O-----P-----Q-----R-----S-----T-----U-----V-----W-----X-----Y-----Z-----[-----\-----]-----^-----_-----`-----a-----b-----c-----d-----e-----f-----g-----h-----i-----j-----k-----l-----m-----n-----o-----p-----q-----r-----s-----t-----u-----v-----w-----x-----y-----z-----{-----|-----}-----~-----

The 8 international sets are individually selected by "DIP" switches in the paper compartment. The block graphics can be combined to form borders or other designs. For example:

XXXXXXXX XXXX WWWWWW OOOOOO FFFFFF TTTTTT ++++++ OOOOO VVVVVV rrrrrrrrrrr

The STX-80 comes with a well-written 106 page manual that should solve most of the problems you encounter.

The major disadvantage of the STX-80 is the cost of paper---\$9.95 for two 100 foot rolls. It does have the advantage of not having an expensive ribbon to replace and it is "whisper quiet" when compared to the impact dot-matrix printers.

The paper has a tendency to curl up but it is easily flattened. The print is crisp and sharp and it photocopied very well.

The combination of the ***TYPWRITER*** word processing package and the STX-80 printer is a hard two-some to beat. The two together give you power and versatility that would have cost over \$700.00 several years ago.

The STX-80 is available locally at BEST Products at the "rock-bottom price of \$169.00 (without a cable). TENEX Computer Marketing Systems sells the STX-80 for \$189.00 and they also have a compatible cable.

Reviewed By
Bob Carmany

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THE SOFTWARE SHOPPER By Bob Carmany
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This column will be used to present a variety of software packages available for the T.I. 99/4A. It will attempt to show the scope of software packages available from various catalogues and individual authors.

This month, we are going to start with educational and personal enrichment packages for both young and old.

Hangmath/Three Fun Games
Kidware
Basic Console
Cassette(\$10.95)

This educational game program takes the old standby "Hangman" and adds a new twist. Instead of using words the player has to guess arithmetic operators and numbers in randomly generated problems. There are three levels of difficulty. Hi/Lo, Code, and Sequence are the games included in the second segment of the program.

Target Math
Micro-Ed
Extended Basic
Cassette(\$9.95) Diskette(\$12.95)

This is an action game in which the player helps a parachutist land on target by correctly solving addition, subtraction, multiplication, and division problems. A miss causes the parachutist to miss his target. The players performance is summarized and the end of the game.

Spelling Teacher
American Software
Terminal Emulator II, Speech Synthesizer
Cassette(\$19.95) Diskette(\$21.95)

This program enables the student to enter his weekly spelling list from school into the computer and the computer will drill the student and check for correct spelling. The computer will remember the mis-spelled words and review them with the student.

Med Alert!
Futura Software
Extended Basic, Disk System
Diskette(\$34.95)

This is a first aide, medical emergency program that stores emergency numbers, deals with poisonings and other medical emergencies. It also helps teach children to avoid poisonous substances and dangerous plants.

Trendline
Dynamic Data
Basic or Extended Basic
Cassette(\$20.00) Diskette(\$20.00)

A stock market analysis program that stores daily closing data and will calculate slopes, means, and standard deviation of the data. It will store up to 400 inputs.

All of the above listed programs are available from TENEX, P.O. Box 6578, South Bend, Indiana.

THE HARDWARE SHOPPER By Bob Carmany

This month, we are going to look at what is available in the marketplace in the area of memory expansion. These products are advertised in THE 99^{ER} HOME COMPUTER MAGAZINE and other publications. The products from Intellitec and Tachyon Systems were reviewed in the September issue of HCM and were judged equal to the Texas Instrument produced memory expansion card.

Corcomp, Inc.
23461 Ridge Route Dr.
Suite H
Laguna Hills, CA 92653

Corcomp produces a 32K card that fits into the PEB and is advertised as being completely compatible with the T.I. system. It retails for \$149.95. They also produce an expansion box and other cards to fit it and T.I.'s PEB.

Foundation
74 Claire Way
Tiburon, CA 94920

Foundation produces two cards to fit the PEB. One is a 32K card and the other is a 128K card. The 32K card sells for \$150.00 and the 128K for \$230.00. Both are advertised as being T.I.-compatible.

Intellitec
2337 Bonanza Court
South Jordan, Utah 84065

Intellitec produces both a 32K card for the PEB and a 32K stand-alone box that plugs into the expansion port on the right side of the console. The 32K card costs \$130.00 and the stand-alone is \$220.00. Both were reviewed in HCM.

Tachyon Systems
5125 South Westwind Way
Kearns, Utah 84114

Tachyon systems offers a 32K stand-alone for \$125.00 that is the functional equivalent of T.I.'s.

Ultracomp Systems
1001 Ogden Ave #5
Downers Grove, Ill.

Ultracomp offers a line of stand-alone memory expansion devices in several sizes. They offer a 32K model for \$169.00 and a 16K model for about \$100.00. They also have a non-volatile, battery-backed memory expansion in 32K, 16K, and 8K sizes. The 32K retails for \$269.00 and they retain their data when the power is disconnected.

Doryt Systems
14 Glen St.
Glen Cove, N.Y. 11542

Doryt Systems makes a 32K stand-alone that plugs into the console expansion port and sells for \$175.00. They also make a parallel printer interface.

Each of the companies mentioned will send free literature about their products on request.

****TYPWRITER****

Extended Software Co.
11987 Cedar Creek Dr.
Cincinnati, Ohio

Price: \$32.00/Cassette
\$35.00/Diskette

System

Req:

Extended Basic Module
Printer Interface
Printer

****TYPWRITER**** is a word processing program that uses the 16K memory in the T.I. 99/4A console. The package is upwards compatible and can be altered to take advantage of the 8K string variable RAM in the 32K Memory Expansion Card. It is also compatible with the TI-WRITER package. This makes it a potentially very powerful package.

The program has 12 print controls that allow the writer to manipulate margins, underline, and send special codes (ie. GRAPHICS) to the printer. It also lets you link segments of text together at the time of printing---even in mid-word. You can re-print a document that is currently in the computer's memory and create "fill-in-the-blank" type form letters.

The text is edited by using the T.I. Extended Basic commands. Cursor controlled functions involving the 14 editing commands provide for the solution of a variety of problems.

The program does have some shortcomings, however, that would make some documents difficult to produce. The 28 character X 20 line text window would make setting up tabular data difficult. The memory limitations preclude the inclusion of "block text" or "sentence move and search". The program has a 6 text screen storage which can be easily overcome with the program's ability to form documents of infinite length. The individual text segments can be stored on tape for later printing.

The program is well-documented and comes with a 23 page booklet that takes about an hour to read. The instructions are clear and easily understood. After reading your booklet, you should be ready to "take the plunge" and write your own letters and documents. So, if you are in the market for a small word processing package that does exactly what it claims, ****TYPWRITER**** might be just what you need.

****TYPWRITER**** is available from the manufacturer or from TENEX Computer Marketing Systems, P.O. Box 6578, South Bend, Indiana.

Reviewed by

Bob Carmany

PROGRAMMING TIPS

Have you ever gotten tired of seeing your programs listed on the Cyan colored screen? How would you like to "spice up" your programming screen---change the color of the screen, text, and even the cursor?

If you have an Extended Basic module, it can be done without memory expansion. This tip comes from "THE SMART PROGRAMMER" By MILLER'S GRAPHICS.

To change the screen color, type in the following in the immediate mode (NO LINE NUMBERS):

```
CALL SCREEN(?)::ACCEPT AT(1,1):A
```

Press ENTER. The screen will turn dark red and the cursor will appear in the upper left corner waiting for an input. DO NOT enter anything! Instead, press FCTN 4. The cursor will appear at the bottom of the screen and you can now list or type your program on the red screen.

However, if you create an ERROR, or execute PRINT, CALL CLEAR, or RUN, the screen will change back to its normal Cyan color.

To change the screen, text, and cursor type in the following:

```
FOR I=1 TO 12::CALL COLOR(I,16,1)::NEXT I::CALL SCREEN(5)::  
ACCEPT AT(1,1):A
```

Then, follow the instructions for the first segment.

To change the cursor color, type in the following:

```
CALL COLOR(0,7,1)::ACCEPT AT(1,1):A
```

This will change the cursor color when you follow the previous instructions.

Of course, you can substitute the colors of your choice in any of the statements to get whichever is your particular favorite. Just remember, type the above lines in the immediate mode without line numbers and then list or type in your program.

SPECIAL ANNOUNCEMENT

NEW OFFICERS WILL BE ELECTED AT OUR MARCH 6th MEETING. PLEASE BE PRESENT TO

CAST YOUR BALLOT

GETTING YOUR TI TO TALK TO YOU

by
Edwin Simpson

One of the most interesting things about the 99/4A is its speech capabilities. Beginners should remember that you can get music and sound effects with just the computer, but for speech you must ass the speech synthesizer. Then you can use a program that already contains speech, such as "Early Reading", "Multiplication I" or "Parsec"; or you can program your own speech.

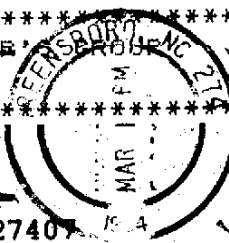
The original method of programming speech requires Extended Basic or the Speech Editor cartridge which gives you access to a list of words and phrases that the computer knows. Try an example. Insert the Extended Basic cartridge, call up extended basic, and turn to the words in the extended basic manual. "Hello" is one of the words, so type in: CALL SAY("HELLO"). The computer will say hello to you after you press enter. If you look through the list you will find "how", "are", and "you" are listed so try this: CALL SAY("HOW ARE YOU"). The vocabulary list also contains phrases such as "handheld unit", "that is correct", and "Texas Instruments." Try this: CALL SAY("TEXAS INSTRUMENTS") Your computer probably spelled it out letter-by-letter. What happened?. Your extended basic manual forgot to tell you something. Try it this way: CALL SAY("# TEXAS INSTRUMENTS#"). Hopefully it worked that time. This method of speech gives you excellent pronunciation, but the list of words is somewhat limited. 99er Magazine, Vol 1, #6, has a "verbose" program that tells you how to combine words or parts of words to create new words. TI originally planned to produce modules that would add to the vocabulary. They were to fit inside the hinged door of the speech synthesizer but before they could be produced, TI developed a new that allowed unlimited vocabulary. Terminal Emulator II gives you access to this method of speech, but it is often difficult to get correct pronunciation. Sometimes you must misspell words so they will sound right. Try an example. Plug in the Terminal Emulator II and call up basic. Type in: Open #1: "Speech", Output.

PRINT # 1: "She Sells Sea Shells by the Seashore". Now try it with anything you want to say. You need only one "OPEN" statement and it can be followed by as many "PRINT" statements as Memory will allow.

REMEMBER : EXTENDED BASIC GIVES YOU BETTER PRONUNCIATION, TERMINAL EMULATOR II GIVES YOU MORE WORDS.

USING YOUR SPEECH SYNTHESIZER WILL BE OUR DEMONSTRATION PROGRAM FOR OUR MARCH 6th MEETING. WE LOOK FOWARD TO YOUR ATTENDANCE!

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Bob Carmany
1504 Larson St.
Greensboro NC 27407

