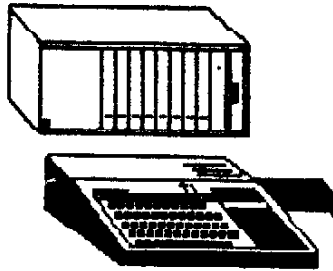


# THE BREAD BOARD

OFFICIAL NEWLETTER OF THE  
TIDEWATER 99/4 USER GROUP INC.  
Post Office Box 1935  
Newport News, VA. 23601



TI-99/4

Non Profit Organization  
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Permit No. 61

APRIL 1986  
VOL 5 No. 4

A Non-Profit Virginia Corporation  
dedicated to educating and  
enlightening TI-99/4 users  
to the full potential  
of home computing.

DALLAS TI HOME COMPUTER  
1221 MOSSWOOD  
IRVING, TX 75061

Return Requested

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NEWSLETTER EDITOR Ken McLaurin 497-7188

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## IN THIS ISSUE

MEETING NOTICE: The Southside Chapter meets every first and third Tuesday of each month at E.C.P.I. (Electronic Computer Programming Institute) located at 3661 East Virginia Beach Blvd. at Ingleside Ave. Educational classes start at 6:30 pm in room 206 followed by the regular meeting and discussion groups at 7:30 pm. For April, meetings will be held on the 1st and 15th of the month.

The Peninsula Chapter meets every second Tuesday of each month at Warwick High School, 51 Copeland Lane, Room 220-22. Formal meetings begin at 7:30 pm. with informal discussion before and after the meeting. Library is open to members during informal sessions. For April, the regular scheduled meeting is April 8th.

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### PUBLICATION NOTICE:

THE BREAD BOARD is published monthly by the officers of THE TIDEWATER 99/4 USERS GROUP for distribution free to its members or there are no subscription fees and not available for sale. Entered as third class postage at Grafton, Va. under permit No. Reviews or products are the opinion of the contributing individual and may not reflect the views of the group, or its officers. favorable review is not an endorsement, nor does the group, its officers and/or editors assume any liability for omissions unfavorable reviews. Contrasting opinions are solicited and will be published if acceptable. Any rebuttal or contrasting view received and deemed unacceptable or not published due to space requirements, etc., will be acknowledged in the newsletter with information on how to obtain a copy (usually a return addressed envelope with proper postage.) Contributions in the form of review articles, short original or public domain programs and/or classified items should be submitted to any club officer at any regular meeting (or within one week thereafter) for publication in the next newsletter.

NOTES FROM THE VICE PRESIDENT

Well, as I said last month, I may have created a monster! It seems I did make a TYPO in copying the TIPS FROM THE TIGERCUB. And, the program I couldn't get to work should have been obvious, but I started out thinking PROGRAMS and just never thought FILES! The program was a file checker--not a program checker, as I insisted on making it. No wonder I was unable to get it to work. The "typo" I made was in the REAL B15 letters program, (line 200), and should read, "200 X=POS (HX\$,X\$,1)-1:: T\$=SEG\$(BNS\$,X\$5+1,4)&T\$ :: NEXT J :: R\$=T\$ :: T\$=" :: SUBEND". The printers left off two lines on the last page also. The last line in Column 2 should have read "copy (to print to a printer)". It is also, and the final line of the page should have read, "appreciation of your service to the group." Our apologies for not having proofread the copy as is customary.

In combining the rosters of our two groups, I noted that the Southside Chapter includes in the member's address and phone number, if the member has a modem. It has been some time since we published a phone directory, and I think this would be useful information to add to such a directory. There has been some discussion at our officers' meetings if there would be any objection to having the phone directory published in the newsletter, as we now include a lot of other user groups as well as commercial sailings. If any of you with unlisted numbers, or for any reason object to us publishing your number please let us know. Those in the Peninsula Chapter who have modems, please let us know also as we want to update our files. On the subject of modems, the week I spent in Williamsburg gave me an opportunity to try out some of the local BBS. We only have one in Gloucester, and I try to keep the phone bill to a minimum. I've included the numbers of them in this letter as some of you may not be aware of them all. For those of you who are just getting started, as I am, I also have reprinted an article on etiquette when "on line". Ken Silver does a lot of work on the GREAT GAMMA TBBS keeping the TI corner in order. Check with Ken if you have questions, and remember the TUG TBBS operated by our Southside member, as you read last month. If you have a modem and have never logged on with CompuServe, you may have a free tour by using ID: 77770,101 PASSWORD: FRE-DEMO. This ID and password will not work on TYNNET TELNET, etc., you must have a CompuServe number. On the peninsula it's 722-0016. There's a whole world of information out there at the other end of your RS232. I've submitted a lot of material to Ken for consideration. I know there won't be room for all of it this month, but it's a subject I hope to continue both learning and passing on in the newsletter.

Don Andrews  
SECRETARY'S REPORT:

The March meeting was called to order

by the Vice President, as our President was attending the first meeting of the Board of Directors since our merger. We were informed by Judy North that the minutes of the last meeting were in error to the extent that she was serving on the newsletter committee, and does not chair that committee. With this correction, the minutes and Treasurer's report as printed in the newsletter were accepted as being correct. In old business, it was reported that our memory expansion had been returned--that very day, in fact--so it had not been checked out. Our shipment of disks from 3-M had been received and distributed equally between the two Chapters with one package of disks (including a free head cleaner) to be offered as some sort of incentive award to include both Chapters. Two boxes of these disks were allocated to the library to allow for expansion, and the remainder placed in the treasury, to be offered for sale to our members. New business was tabled pending the conclusion of the Board meeting, and an informative program was presented by Terry Smithwick. Following Terry's presentation, the president was given the chair and a report given by Vic Vogelsang on the board meeting. New business turned to the possibility of having informal get-togethers, which could include both chapters. A software party was suggested and tabled for further consideration. The issuance of an ID card was discussed, and an offer to assist with the printing of the ID cards was made by David Hamilton, one of our new members. The meeting was adjourned by the president at 9:30 p. m.

Since our merger, I have not printed a report on our account with Unisource. We are not trying to keep the information a secret, it's just that we have been unable to get a statement from Unisource. I understand our other officers are having problems also in obtaining payment on the advertising they ran and their account is now four months in arrears. We will pass the information to you as soon as it is available.

Earl Andrews

TREASURER'S REPORT

Reported Last Month. . .	\$91.27
Income. . . . .	55.00
Expenditures. . . . .	30.00
	-----
Cash Balance on Hand . . .	116.27

for  
Brad Long  
by JIM TRANT

APRIL PROGRAM NOTICE

Barry Ensley will present the program for April, and in order for you to be better prepared for his presentation, he offers the following material:

An application of  
PROGRAMS THAT WRITE PROGRAMS

The following sequence is a quick

way I devised for building a subprogram that will assure that all character patterns, color sets and sprites are in their normal state. There are times when they are not restored to their normal state (come to this month's meeting) and undesirable results may occur.

The program below will write a program (come to this month's meeting) that contains in DATA statements all the character codes for ASCII 96 through 143 as they occur when the computer is turned on. The resulting program has the filename CHAR-LIST and will be in D/V 163 format, which is a Merged Program.

```
100 DIM C$(48):: FOR C=96 TO
143 :: CALL CHARPAT(C,C$(C-
95)):: NEXT C
110 OPEN #1:"DSK1.CHAR-LIST"
,VARIABLE 163
120 FOR X=1 TO 48 STEP 6
130 A$=CHR$(0)CHR$(X+199)C
HR$(147)CHR$(199)CHR$(16)
C$(X)CHR$(179)CHR$(199)CH
R$(16)C$(X+1)CHR$(179)CHR
(179)
140 A$=A$CHR$(199)CHR$(16)
C$(X+3)CHR$(179)CHR$(199)
CHR$(16)C$(X+4)CHR$(179)
CHR$(199)CHR$(16)C$(X+5)C
HR$(0)
150 PRINT #1:A$ :: NEXT X
160 PRINT #1:CHR$(255)CHR$(
255):: CLOSE #1
170 CALL INIT :: CALL LOAD(-
31962,100,124)
```

After running that program, type in the following one. There's no need to type NEW first, since the above program will already be erased from memory! (Come to this month's meeting.)

```
100 SUB CHARCLEAR
110 CALL DELSPRITE(ALL):: CA
LL MAGNIFY(1):: CALL CHARSET
:: FOR C=96 TO 143 :: READ
C$:: CALL CHAR(C,C$):: NEXT C
120 FOR C=1 TO 12 :: CALL CO
LOR(C,2,1):: NEXT C :: CALL
SCREEN(B)
```

Now Merge in CHAR-LIST (MERGE DSK1.CHAR-LIST), Resequence the program using a high number (like 30000) and add a FINAL line with only the statement SUBEND in it. Finally, save the resulting program in Merged format (SAVE DSK1.CHAR-CLEAR,MERGE). You now have a subprogram that can be Merged into another program and when called with the statement CALL CHARCLEAR will restore "everything" to the normal state.

If you're interested in learning more about programs that write programs - there is unlimited potential here - come to this month's meeting. AND BRING THIS ALONG WITH YOU! We will work with it to help demonstrate how this technique works. I also recommend that you bring a print-out of the token codes. (What, you ask? See TIPS FROM THE TIGERCUB #23.)

Barry Ensley

NOTES FROM THE PRESIDENT: Several people have brought up the thought that the newsletter and our meeting programs should contain more information for TI owners who don't have the PE box, disk drives, etc. but have a console, a cassette recorder and maybe a printer. For almost a year I had just a console and a cassette recorder and I had a lot of fun doing things described in the manuals and other books and trying BREADBOARD programs. The need to merge programs and to print led me to purchase a second hand PE box with a disk drive, memory expansion and RS232 boards. I also got a lot of software including Extended BASIC and TI-WRITER. Later on I bought a printer. This all works fine, but the PE box is bulky. Now there appear to be many products on the market, by which at least some of the capability of that configuration may be obtained without the PE box. Stand alone disk drives are the most common. But I have noticed in the catalogs such things as word processors that only require the console and a cassette recorder and printer hookups without the TI RS232 board. Having never tried any of these, I wonder how satisfactory they are. It would seem to me that if they lived up to the advertisements, user satisfaction would greatly depend on the user's application. This is then a plea for a user of such equipment to write an article or even a monthly column and/or give a presentation from the user's point of view.

Jim Trant

An application of PROGRAMS THAT WRITE PROGRAMS

The following sequence is a quick way I devised for building a subprogram that will assume that all character patterns, color sets and sprites are in their normal state. There are times when they are not (refer to their normal state (come to this month's meeting) and undesirable results may occur.

The program below will write a program (come to this month's meeting) that contains in DATA statements all the character codes for ASCII 70 through 143 as they occur when the computer is turned on. The resulting program has the filename CHAR-LIST and will be in D/V 163 format, which is a Merged Program.

```
100 DIM C$(48): FOR C=96 TO
143: CALL CHARPAT(C,C)
110: NEXT C
120 OPEN #1:"DSK1.CHAR-LIST"
130 VARIABLE 163
140 FOR X=1 TO 48 STEP 6
150 A$=CHR$(0)&CHR$(X+199)&C
160 B$=CHR$(1)&CHR$(X+199)&CHR$(16)
170 C$=CHR$(2)&CHR$(X+199)&CHR$(16)
180 D$=CHR$(3)&CHR$(X+199)&CHR$(16)
190 E$=CHR$(4)&CHR$(X+199)&CHR$(16)
200 F$=CHR$(5)&CHR$(X+199)&CHR$(16)
210 G$=CHR$(6)&CHR$(X+199)&CHR$(16)
220 H$=CHR$(7)&CHR$(X+199)&CHR$(16)
230 I$=CHR$(8)&CHR$(X+199)&CHR$(16)
240 J$=CHR$(9)&CHR$(X+199)&CHR$(16)
250 K$=CHR$(10)&CHR$(X+199)&CHR$(16)
260 L$=CHR$(11)&CHR$(X+199)&CHR$(16)
270 M$=CHR$(12)&CHR$(X+199)&CHR$(16)
280 N$=CHR$(13)&CHR$(X+199)&CHR$(16)
290 O$=CHR$(14)&CHR$(X+199)&CHR$(16)
300 P$=CHR$(15)&CHR$(X+199)&CHR$(16)
310 Q$=CHR$(16)&CHR$(X+199)&CHR$(16)
320 R$=CHR$(17)&CHR$(X+199)&CHR$(16)
330 S$=CHR$(18)&CHR$(X+199)&CHR$(16)
340 T$=CHR$(19)&CHR$(X+199)&CHR$(16)
350 U$=CHR$(20)&CHR$(X+199)&CHR$(16)
360 V$=CHR$(21)&CHR$(X+199)&CHR$(16)
370 W$=CHR$(22)&CHR$(X+199)&CHR$(16)
380 X$=CHR$(23)&CHR$(X+199)&CHR$(16)
390 Y$=CHR$(24)&CHR$(X+199)&CHR$(16)
400 Z$=CHR$(25)&CHR$(X+199)&CHR$(16)
410 PRINT #1:A$: NEXT X
420 PRINT #1:CHR$(255)&CHR$(
255): NEXT X
430 CLOSE #1
440 CALL INIT: CALL LOAD(-
31962,100,124)
```

After running that program, type in the following one. There is no need to type NEW first, since the above program will already be erased from memory. (Come to this month's meeting.)

```
100 SUB CHARCLEAR
110 CALL DE$(SPRITE(ALL)): CA
LL MAGNIFY(1): CALL CHARSET
120 FOR C=96 TO 143: READ
C$: CALL CHAR(C,C$): NEXT
C
130 FOR C=1 TO 12: CALL CO
LOR(C,C): NEXT C: CALL
SCREEN(0)
```

Now Merge in CHAR-LIST (MERGE DSK1.CHAR-LIST). Reexecute the program using a high number (like 9000) and add a FINAL line with only the statement SUBEND in it. Finally, save the resulting program in Merged format (SAVE DSK1.CHAR-CLEAR.MERGE). You now have a subprogram that can be Merged into another program and when called with the statement CALL CHARCLEAR will restore "everything" to the normal state.

If you're interested in learning more about programs that write programs - there is unlimited potential here - come to this month's meeting. AND BRING THIS ALONG WITH YOU. We will work with it to help demonstrate how this technique works. I also recommend that you bring a print-out of the token codes. What you see? See TIPS FROM THE TIGERCUB #27.

Barry Enslay

PEEKs and POKEs

This month the unraveling of -31788: an address with lot of potential. (See last month's PEEKs and POKEs.)

The first "mystery" to be solved is the way it functions in general. I imagine this was pretty obvious. Simply POKEing a value into the address did nothing. After it's POKEd, a key must be pressed in order for the POKE to take effect. This can be accomplished with a CALL KEY statement (as illustrated by the use of the SUB TOUCH routine), or by an INPUT or ACCEPT AT statement (used in the multicolor code demo). This method of activating a POKE opens up some exciting doors.

Let's take a look at the different values that can be POKEd and what they do. Some are quite obvious: 225 causes sprites to change size and magnified [CALL MAGNIFY (2) 226 makes sprites double sized and unmagnified [CALL MAGNIFY (3) 227 turns the sprites into double sized and magnified ones [CALL MAGNIFY (4)]. 224 is a default value providing normal operation. That's sprites are single sized and unmagnified [CALL MAGNIFY (1)], the screen is in the regular mode and the screen is unblanked. (Unblanked screen is coming up.)

We saw last month that 232 places the computer into multicolor mode. That leaves two unexamined values, 160 and 192; these I find most fascinating.

POKEing 160 then pressing a key, in a manner described above, blanks the screen. If you use INPUT or ACCEPT AT statement, the screen will go blank as soon as any key is pressed. You can continue to enter a string, press ENTER, have the program go to another INPUT statement(s), etc., and the screen will display nothing.

The screen will remain blank until the program ends, or until another valid value is POKEd (it doesn't have to be 224 - POKEing, say 226, will cause any sprites to become double sized) and a key is pressed, again in the manner described above. If this is done, the screen will "unblank." All text, graphics, and sprites that were present before 160 was POKEd, and any added while in the blanked condition, will now become visible.

In reality everything will be running normally according to program's instructions, except you won't be able to see anything on the screen. You can start a program by blanking the screen, fill the screen with text/graphics/sprites then unblank the screen to reveal all the work the program has done. Play with this a little, and I think you will see it provides for some very interesting programming possibilities.

The final value is 192. All it does is stop sprite motion. However, if you ran my program last month, it appeared to be doing much more. When 192 was POKEd and activated, the sprites stopped moving all right, but then they began to disappear - one-by-one from the screen.

Instead of using this POKE to just stop sprite motion, I turned it into a vehicle to perform a little trick. When the program went back to line 120 it began to place sprites in the position specified by the CALL SPRITE statement, starting with SPRITE #1 and continuing through the loop until all 28 sprites had been placed there.

As each sprite was redefined and placed in the starting position, the respectively numbered old sprite was removed from the position it occupied when the POKEing of 192 stopped its motion. This gave the illusion of the sprites being plucked individually off the screen and ends up looking like only one sprite is left on the screen. Actually, all 28 sprites are there stacked on top of each other. Until another value for the address -31788 was POKEd nothing did, or could, happen.

I believe that little program gave an excellent example of what can be accomplished with POKEing and a little imagination. It's not a graphics or sprite programmer yet I was able to produce what I felt was a rather unique effect without much difficulty. Try some POKEing with -31788 and its various values. It's a fine one to try your hand at using the CALL LOAD statement.

If you have questions, comments or disagreements concerning any of my PEEKs or POKEs, drop me a line c/o the UG or feel free to call me at 898-9013.

Barry Enslay

For sale: TI99 P-box (new), 32K memory, RS-232, Disk Drive and controller. Microsoft Multiplan, one console call: DAVE HAMILTON 693-2732 in Gloucester, Va.

BASIC SCREEN DUMP from ROBERT BRYANT

```
100 OPEN #1:"FD"
110 FOR ROW=1 TO 24
120 FOR COL=3 TO 50
130 CALL GCHAR(ROW,COL,G)
140 PRINT #1:CHR$(G);
150 NEXT COL
160 PRINT #1
170 NEXT ROW
180 CLOSE #1
190 END
```

\* **SOUTHSIDE CHAPTER NEWS** \*

**MEETING NOTES:**

Educational classes this month were treated to discussions on Pilot 99 and C Language 99 and its transportability, and structuring Basic using "GO SUB" vice "GO TO". Those who do not attend the meetings miss out on a lot of these extras. The first meeting in April will be on Forth so bring your book to follow along and participate. The second meeting will be on Basic. We are still working on obtaining a second compatible half height disk drive for the chapters computer. For members who may be interested in participating in a quantity buy, call Mark Gerlach.

**Treasurers Report:** Dick reports a balance of \$576.16.

**HARDWARE NOTE:**

Bob McGill reported that a replacement fan for the peripheral expansion box is available from Radio Shack, 273-242, \$14.95. The muffin fan is 3" in diameter and rated at 3200 CFM.

**SPECIAL GUEST:**

An interesting slide show was presented by our guest speaker, Dr. Hal Breedlove, on "VDT's and Vision". Dr. Breedlove is a member of the Board of Directors of Commonwealth College and an active participant in Ergonomics in relation to the Optometry. Emphasis was placed on VDT operation, normally in the work place, being the cause of "stress related problems" such as headaches, eye strain, irritated eyes, blurred vision, frequent losing place, slow refocusing when looking up to a distance, posture change, neck, shoulder or back tension, excess fatigue and irritability, lessened visual efficiency resulting in more errors and lower speed.

This adds up to less productivity, more absenteeism and to us with home computers, less enjoyment of our hobby. Dr. Breedlove has recommended that we setup our systems so that we have good firm seating, at a height in proper relationship to our VDT. The screen should be at a 20 degree angle of depression from our eye height. He also recommended looking up from our system to refocus and rest our eyes and focus on a distant subject at least every 15 minutes. Handouts emphasizing these points were given out at the close of the presentation.

**BOARD OF DIRECTORS MEETING**  
March 11, 1986

- AGENDA:**
1. ELECTION OF OFFICERS
  2. OPERATION OF THE TREASURY
  3. ID CARDS
  4. NEWSLETTER ADVERTISEMENTS
  5. GETTING BYLAWS STRAIGHT

1. **ELECTION OF OFFICERS:** The following Corporate Officers were elected:

<b>CHAIRMAN</b>	Mark Gerlach
<b>VICE CHAIRMAN</b>	Victor Vogelsang
<b>SECRETARY</b>	Ken Woodcock

2. **THE TREASURY & NEWSLETTER ADVERTISEMENT:** It was decided that the Corporation would have its own account and each chapter would have their own bank account. It was also decided that from the 11th of March forward that money received from advertisement would be shared 50/50 between the Corporation and the chapter responsible for obtaining the ad. Also, each chapter would be assessed \$40/month for operating expenses. This would pay for the operation of the newsletter and legal costs.

3. **ID CARDS:** It was decided that ID cards would give us as members the ability to prove membership in the User Group while at various outside functions. The cost of getting 200 cards is being researched. Mark is looking into getting permission from Texas Instruments to use their logo on the cards.

4. (covered in 2 above)

5. **BYLAWS:** Mark Gerlach will review and rewrite as necessary to have Corporate bylaws and two chapter bylaws.

Future meetings will be held on a quarterly basis. The date of the next meeting will be announced in the newsletter.

Board members present: Mark Gerlach, Jim Trant, Victor Vogelsang, Ken Woodcock



