

# THE GUILFORD 99'ER NEWSLETTER

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NOVEMBER

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## OUR NEXT MEETING

DATE: NOVEMBER 12, 1985  
TIME: 7:00 P.M.  
PLACE: Glenwood Recreation Center  
2010 S. Chapman St.

**NOTICE: DUE TO A CONFLICT IN SCHEDULES, THIS MONTH'S MEETING WILL BE HELD THE SECOND TUESDAY OF THE MONTH, NOV 12TH**

## STARFIELD GRAPHICS

### NOVEMBER MEETING AGENDA

It's now time for you to demonstrate whatever programs "TURN YOU ON!". That's right, all you computer buffs out there, bring any program that you find especially fun, good, or interesting and show us what it's all about. Talk about show and tell! Let's see what you have out there for us! There will be a cassette recorder and a disk drive at the meeting, so no excuses. One program I know will be there is disk manager 1000, which will be demonstrated by Herman Geshwind. This program replaces the DISK MANAGER 2 MODULE, and to hear Herman talk it's superior to the DISK MANAGER 4 program as well. Bring a blank disk with you to the meeting and go home with a copy. Be that as it may, don't forget to bring your own programs to demonstrate too. Hope to see you all there!

DAVE COHEN

Here is a short program that creates a starfield consisting of some 25 "stars". The character definition "A\$" can be altered to change the shape of the star and the foreground and background color codes in the "CALL COLOR" statement could also be changed to change the color of the stars. The program is simple and written in BASIC but the lines could be combined into multi-statement EXTENDED BASIC lines to make a short subroutine. Here is the program:

```
100 RANDOMIZE
110 CALL COLOR(13,16,1)
120 A$="18183CFFFF3C1818"
130 CALL CHAR(128,A$)
140 CALL SCREEN(2)
150 FOR I=1 TO 25
160   CALL HCHAR((RND)+1,
(RND)+1,128)
170 NEXT I
180 FOR DELAY=1 TO 1000
190 NEXT DELAY
200 CALL CLEAR
210 END
```

Bob Carmany

PROGRAM STORAGE

The TI computer has two types of memory. One is the ROM, Read Only Memory, that was built into the computer by the manufacturer. It contains all the commands that tell the computer what to do when you hit a key. If you turn the computer off the ROM is still there, waiting for you to turn the computer on again. But what about the programs that you just spent so much time typing in. Well these go into the RAM, or Random Access Memory. This is a jazzy name for the place where any information entered into the computer by any means, including the keyboard, is stored. RAM can take this information and store it temporarily. Any time that same information is needed it can be taken from storage and made use of without typing it in again.

If you do not store this information on a storage device until the next time that you need it, however, it will be lost when the computer is turned off. So how do you store this information? For the home computer there are two choices of storage devices, the cassette recorder and the disk drive.

The two work by taking the information in RAM and electronically recording it on magnetic media. Once recorded the information can be "played" back into the computer. A storage device is essential if the computer is to be more than a toy. But the next decision is whether to get a cassette or disk system.

Most people start off with the cassette due to its price. A small cassette recorder is all you need and they, as well as the tapes are readily available and inexpensive. However the main drawback is that they are slow, slow, slow!! A second drawback is that the programs are stored on the tape one after another (sequential file organization....ED.).

If you want a particular program you have to search the cassette. If your recorder has a counter, that can help, but you can't just "listen" to a program and tell if it's the right one, you must load it into the computer and run it to see if it's the right one.

A disk though, is totally different. First, the disk is very fast loading and saving a program. What may take three minutes to load from a cassette might take only 30 seconds from a disk. Second, the computer can search a disk for a particular program for you out of all the programs on a disk (see note). Another advantage to a disk is its capacity, a disk can be double sided and double density so it can store more programs than a sixty minute cassette tape. One other consideration is that a tape is less sensitive to rough handling than a disk and as such the programs may be more "secure". The main point is that a storage device is essential to full enjoyment of your TI.

If you use your TI for some games and a few calculations or if you like a few minutes to do something different every once in a while, then cassette storage might be all you need. But if you use your TI as a tool for many uses and applications you might consider a disk drive storage system. It will most certainly open up new frontiers for you and your computer!

Dave Cohen

(Editor's note....The method of program and file storage on a disk system is referred to as Random organization. The disk controller maintains, on each individual disk, a directory of all the files contained on the disk and of their location. When a file or program is loaded, the disk controller finds its location on the disk from the directory and the read/write head then moves directly to the file, without having to go over other, unwanted, files.)

TI SHOPPER

This month, we are going to introduce a new exciting product from Miller's Graphics. Rather than try to explain the function of GRAM KRACKER in my own words, I will simply use the promo that appeared in the latest issue of THE SMART PROGRAMMER.

"You will be able to plug ANY module into the GRAM KRACKER and SAVE its contents to Disk or Cassette. Once saved, they can be loaded into the battery backed up GRAM KRACKER and run.

It is very simple to operate. On the front panel there are 4 switches and a Reset button. The switches control the loader, Ram banks and write protect, and Enable or Disable of GRAMs 0,1, &2. The GRAM KRACKER also contains sockets on its circuit board to allow you to expand its total programmable memory to 80K of RAM and GRAM. This gives you 16K of bank switched cartridge ROM/RAM and 64K of Console and Cartridge GROM/GRAM. This means you can now modify the contents of GRAM 0, the system monitor, GRAMs 1 & 2, TI Basic, and GRAMs 3-7, in the cartridge. You can also modify the contents of Cartridge RAM 6000-7FFF (2 banks) to suit your needs. So now you can change the title screen, change menus, have true ascenders and descenders for your character sets. You can change the default screen and character colors for any module. You can change the default printer configuration for your modules. You can add many new CALLs to TI Basic or TI Extended Basic. You can override TI Basic and put something else in its place. This would allow you to have a menu with a couple of different modules to select from."

"By the time you read this the GRAM KRACKER will be ready to start production."....."The price will be in the 150 to 200 range"..

This is a very interesting development, to say the least.

Miller's Graphics also has some other software and hardware projects on the drawing board. If the last two software packages (ADVANCED DIAGNOSTICS and EXPLORER) are any indication of the quality of this release, it should be DYNAMITE!!!

Now, to a somewhat related topic. It seems that there is a problem with the CORCOMP Disk Controller cards. When it starts to go out it will return a NO DISKETTE OR NO DRIVE ERRORS and I/O ERROR 06. When it does this -- beware. It will start "eating" files off the diskette! It seems that the problem could be solved with a software modification. The problem is that since they stuck Miller's Graphics for about \$250,000 in R & D costs, Craig Miller told them to "blow it out their ear" ----- he holds the copyright to the source code for the Controller Card. CORCOMP is also charging \$50.00 for in-warranty repairs it now appears. Some "User-friendly" company!

There is another authorized version of Extended Basic available. This one is from Germany and is compatible with current Extended Basic with some enhancements. It adds the following "new" CALLs: GSAVE, GLOAD, BHCOPY, VPEEK, GPEEK, VPOKE, ALLSET, WAIT, MOVE, MLOAD, MSAVE, BYE, NEW, RESTORE, QUITOF, QUITON, SPRON, SPROF, FIND and APESOFT.

CALL APESOFT loads some high-res graphics routines into low memory expansion that allow you to draw lines, etc. with a single pixel accuracy. The price is \$120.00 and it is available from MECHATRONIC GmbH, Dresdener Strasse 21, 7032 Sindelfingen, West Germany, (0 70 31) 8/ 50 42. They will also send you more information about their product.

Well, that does it for this month. It looks like our "poor orphaned" computer is hardly that any more. The software and hardware developments are once again coming hot and heavy!

Bob Carmany

OLDIES BUT GOODIES

Here are a few programming tips that you may have overlooked or just plain missed that have appeared at one time or other in our newsletter.

To change the screen and cursor color type in the following in the immediate mode:

```
FOR I=1 TO 12::CALL COLOR(I,16,1)
::NEXT I::CALL SCREEN(7):: ACCEPT
AT(1,1):A
```

When the cursor appears, press FCTN 4 and you are ready to go! Of course, if you create an error, or execute a CALL CLEAR, PRINT, or RUN, the screen will revert back to its normal cyan color.

Here is a short routine to round off numbers in your programs:

```
100 X=5.6583
110 DEF ROU(X)=INT(((10^2)*X)+0.5)
/2(10^2)
120 PRINT X,ROU(X)
```

To change the number of places, change each "2" in line 110 to the number of places desired.

Here is a brief explanation of "and" and "or" in conditional statements. The "\*" is used for "and" and the "+" is used for "or". Thus:

```
10 IF (X=10)*(Y=20) THEN 100
```

Would read "if X=10 and Y=20 then GOTO 100. If both conditions are true, the computer would go to line 100. Otherwise, it would go to the line following line 10.

For those of you with cassette systems. If you have ever typed

in "OLD CS1" when you meant to type in "SAVE CS1" and then pressed ENTER you find yourself in a bit of a sticky situation. There is a way out!!

When the first instruction message appears, press SHIFT E instead of ENTER. You will get an error message but your program will still be in memory -- and you have another chance to SAVE it.

If you have memory expansion, you can type in:

```
CALL INIT::CALL LOAD(-31806,16)
```

before you start programming and not have to worry about accidentally hitting FCTN = instead of SHIFT = again. That particular CALL LOAD will disable QUIT (FCTN =).

For the use of sprites in the multi-color mode, use this little demo program from MILLER'S GRAPHICS:

```
10 CALL CLEAR::CALL INIT::CALL
LOAD(-31788,232)::PRINT "PRESS
ENTER"
```

```
20 CALL KEY(0,K,S)::IF S=0 THEN 20
ELSE CALL SCREEN(2)
```

```
30 CALL CLEAR(FOR T=1 TO 7::FOR
I=34 TO 126::PRINT CHR$(I)::
NEXT I::NEXT T
```

```
40 FOR I=34 TO 126::CALL VCHAR
(1,1,I,768)::NEXT I::GOTO 30
```

Don't forget FCTN-8 (REDO) to make those corrections when you get that SYNTAX ERRDR message. Press FCTN-8 and the line will re-appear and you won't have to type it in again.

I hope that these tips and tricks will be of some value to all of you!!

Bob

Carmany

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FORTH FORUM  
BY BOB CARMANY

We will start off this month's column with a discussion of some of the books that are available on the subject of FORTH. "THINKING FORTH" is another book by Leo Brodie. It deals primarily with the philosophy of programming in FORTH (or any other language). The suggested retail price is \$15.95 and it is available from MILLER'S GRAPHICS and the other usual sources.

There is a two-volume "FORTH FUNDAMENTALS" series that is also available that covers the FIG-FORTH based versions of FORTH language. It should be of great help to those of you who are interested in serious programming. Volume 1 is \$16.95 and Volume 2 is \$13.95 --- again from MG or the other usual sources.

Now, we can turn our attention to some FORTH screens. I was going to start with some of the RS232 Terminal programs this month but when my copy of "THE SMART PROGRAMMER" came I simply had to try out the FORTH screens that were included.

The FORTH column is now being written by Mariusz Stanczak and his first column was a real improvement over Craig Miller's efforts. At any rate, he has written some words that allow you to easily move screens from disk to disk and change the screen numbers while you are at it. These will work with either TI-FORTH or WYCOVE FORTH (with the appropriate definitions added).

In TI-FORTH, you have to add the following definitions to your system:

```
: O> ( n -- f ) O>;
```

```
* CREATE PICK ( item# -- item ) HEX  
C019 , 0A10 , A009 , C650 , 045F ,  
DECIMAL
```

In WYCOVE FORTH add the following definition:

```
CREATE PICK ( item# -- item )  
SMUDGE HEX C016 , 0A10 , A004 ,  
C590 , 0459 , DECIMAL
```

These definitions can be added to the second screen prior to the definition of "SSMOVE".

The WYCOVE version works like a charm and I have found it to be very useful when making back-up disks with only some of the original application screens.

The only change that has to be made is that the screen lines have to be expanded to utilize the TI-FORTH 16 line X 64 character screens.

(SCREENS ARE ON FOLLOWING PAGE)  
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In the July issue of the newsletter, we introduced two menu screens written in Wycove Forth. These screens constructed and displayed the menu options that were supplied with the application disk. The revised screens and accompanying instructions will allow you to have the menu appear on the screen whenever you load Wycove Forth or perform a "COLD-START" of the system. Simply alter the two screens to conform to these two and then, after LOADING them, type in the following in the immediate mode:

```
* APP-MENU CFA *START-UP !
```

This instructs Forth to execute the word "APP-MENU" before you can type anything in. The menu appears on the screen.

To SAVE your newly configured system, type in DSK1 SAVE-SYSTEM for disk or CS1 SAVE-SYSTEM for cassette-based systems.

(SCREENS ON 2ND PAGE FOLLOWING)

## FORTH\_SCREEN5

```
0 : SCOPY ( from+offset to+offset -- )
1 SWAP BLOCK 2- ! UPDATE ;
2 : DDCOPY+ ( from to hi_limit lo_limit )
3 DO OVER OVER SCOPY
4 1+ SWAP 1+ SWAP LOOP ;
5 : SMOVE ( from+offset to+offset cnt --- )
6 DUP 0>
7 IF R/W-CLOSE >R OVER OVER <
8 IF
9 R 1- + SWAP R 1- + SWAP
10 R> 0
11 DO OVER OVER SCOPY
12 1- SWAP 1- SWAP
13 LOOP
14 ELSE
15 R> 0 DDCOPY+
16 THEN
17 ELSE DROP
18 THEN DROP DROP SAVE-BUFFERS ;
19 -->
20
21
22
23
24
25
```

```
0 : ?BUFFERS ( -- number_of_buffers )
1 1 PREV BEGIN +BUF
2 WHILE SWAP 1+ SWAP
3 REPEAT
4 DROP ;
5 : MSG1 ( --- )
6 ." Insert source disk"
7 KEY DROP CR ;
8 : MSG2 ( --- )
9 ." Insert destination disk"
10 KEY DROP CR SAVE-BUFFERS ;
11 : SSMOVE ( from to cnt --- )
12 DUP 0>
13 IF >R >R >R ?BUFFERS
14 R> R> R> 4 PICK /MOD -DUP
15 IF CR SWAP >R 0
16 DO R/W-CLOSE MSG1 3 PICK 0
17 DDCOPY+ R/W-CLOSE MSG2
18 LOOP R>
19 THEN -DUP
20 IF
21 R/W-CLOSE MSG1 0
22 DDCOPY+ R/W-CLOSE MSG2
23 THEN
24 THEN DROP DROP DROP ;
25
```

SCREEN # 68

```
0 ( Wycove Forth Menu, screen 1 of 2 )
1 : LINE SCREEN-WIDTH @ SWAP OVER * DUP
2   CURSOR-POS ! SWAP SPACES
3   CURSOR-POS ! ;
4 : SPEECH-CONTROL 48 LOAD ;
5 : SOUND-CONTROL 65 LOAD ;
6 : STRINGS 61 LOAD ;
7 : RANDOM-NUMBERS 64 LOAD ;
8 : USER-INT 44 LOAD ;
9 : DIGIT-CLOCK 47 LOAD ;
10 : FILE-CONTROL 11 LOAD ;
11 : PRINTER-PIO 14 LOAD ;
12 : FLOATING-POINT 16 LOAD ;
13 : GRAPHICS-WORDS 55 LOAD ;
14 : SPRITES-T/M 56 LOAD ;
15 : ASSEMBLER 36 LOAD ;
16 : TE-II-SPEECH 51 LOAD ;
17 : BIT-MAP 20 LOAD ;
18 : SPRITES-B/M 28 LOAD ;
19 : BIT-MAP/ED 31 LOAD ;
20 : TRACE 70 LOAD ;
21 : DISK-DIR 13 LOAD ;
22
23
24
25
```

-->

SCREEN # 69

```
0 ( Wycove Forth Menu, screen 2 of 2 )
1 : APP-MENU CLS GRAPHICS
2   6 LINE ." SPEECH-CONTROL USER-INT "
3   7 LINE ." SOUND-CONTROL STRINGS "
4   8 LINE ." RANDOM-NUMBERS DIGIT-CLOC
5 K "
6   9 LINE ." FILE-CONTROL PRINTER-PI
7 0 "
8   10 LINE ." FLOATING-POINT SPRITES-T
9 /M"
10  11 LINE ." GRAPHICS-WORDS ASSEMBLER
11 "
12  12 LINE ." TE-II-SPEECH BIT-MAP "
13  13 LINE ." BIT-MAP/ED SPRITES-B
14 /M"
15  14 LINE ." TRACE DISK-DIR"
16  18 LINE ." Enter your choice(s): "
17 ;
18
19
20
21
22
23
24
25
```

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