SOUTH BAY TI USERS GROUP

BITS & BYTES NEWSLETTER

Mailing Address: P.O. BOX 23447 SAN JOSE, CALIFORNIA 95153-3447

* * * NOVEMBER 1988 * * *

PRESIDENTS MESSAGE
by Mike Ewell

It is getting close to that time of year, election time! Are YOU ready to stand up and be counted? The nominations are to be taken at the December meeting and the election is set for the January meeting. If You would like to run for an office, tell ANYONE!

The October meeting was held on a Saturday! due do a problem in the room availability. The first Saturday continues to be the first choice until the membership changes it!

When connecting two TI's together with the RS 232 port, just use your working modem cable to plug into the second TI's RS 232 port. Do not use the modem, just the cable (assuming the cable has the correct plug on it). If you need to extend the cable, do not use another modem cable, but a straight wired! cable (pin 1 to pin 1, etc) and an adapter (a gender changer to connect the two male ends). My own modem cable is wired:

```
COMPUTER END        1 --------------- 1         MODEM END
                    2 --------------- 3
                    3 --------------- 2
                    5 --------------- 5
                    6 --------------- 20
                    7 --------------- 7
                    8 --------------- 8
                   20 --------------- 6
```

The wiring you need depends on what your modem requires.

```
[][][][][][][][][][][][][][][][][][][][][][][][][][][][][][]
[]                                                        []
[] The November SBTIUG meeting will be held at 7:11 P.M.  []
[]                                                        []
[]               THURSDAY,NOVEMBER 3, 1988                []
[]                                                        []
[]  The meeting will be held in the Saratoga Public       []
[]  Library. The library is located at 13650 Saratoga     []
[]  Avenue. From 280(680), take the Saratoga Avenue exit  []
[]  SOUTH.  The library will be on your left, just past   []
[]  the Fruitvale intersection. This is about four miles  []
[]  from the 280 exit.                                    []
[]                                                        []
[][][][][][][][][][][][][][][][][][][][][][][][][][][][][][]
```

The club still needs some solid suggestions what to demo for the meetings. Something that most! of the members would like to see, not what a few people think you want. Speak up to be a Most or settle for what the Few do.

The December meeting is also the Christmas meeting, not just nominations. Any suggestions for a change or do we keep the same format: Raffle, cake, soda and coffee. One free! ticket to each MEMBER, with the option to buy extra tickets!!!!!!!!

!!!!!!!!!Please ask Pat what YOU can do for YOUR newsletter!
!Please ask Bill what YOU can do for YOUR newsletter!!!!!!!!

```
X NOTICE XX NOTICE XX NOTICE XX NOTICE XX NOTICE XX NOTICE X
N                                                          N
O                DECEMBER AND JANUARY MEETINGS             O
T                                                          T
I  The December meeting will be held on 12-1-88 which is   I
C  the first Thursday. NOMINATION TIME FOR 1989!           C
E                                                          E
X  The January meeting will be held on 1-5-89 which is     X
N  the first Thursday. ELECTION TIME!                      N
O                                                          O
T  The first Thursday will continue to be the first choice T
I  for our meetings, but please read the dates carefully   I
C  to avoid a wasted trip or missing a meeting.            C
E                                                          E
X NOTICE XX NOTICE XX NOTICE XX NOTICE XX NOTICE XX NOTICE X
```

SBTIUG CLUB OFFICERS AND OTHERS

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ARCHIVER/NEWSLETTERS	HOY COLE	SEE AT MEETING

SBTIUG GENERAL MEETING 1 OCTOBER, 1988
by Norm Knudsen

The October Meeting was held on a Saturday this month since the first Thursday was not available. The meeting was opened by President Mike Ewell at 3:55 PM. Ther were 15 members and one visitor in attendance.

There was a report by our Librarian, Helmut Fuchs. He announced several new discs including Telco 2.2 and some TI Adventure games. He added, however, that the Adventure Cartridge is required to operate them.

Our long suffering editor entered his usual plea for newsletter articles.

Don Apte, our PR man, announced several upcoming Computer Fairs and Meets, but with the warning that many of these events are being cancelled at the last moment due to low attendance. His advise -- check before you pay if you can!!

Does anyone know how to output the SD list of TIWRITER to the printer?

The meeting was then adjourned for a bulletin board demo using a null modem between the GENEVE and a 99/4.

Editors Ramblings
by Bill Schult

This month, we are back on our regular schedule of the first Thursday of the month, and hopefully we will keep this day of the month. The demonstration for the Month of November will be a demonstration of Utility programs. So we hope to have a good turn out for this demonstration.

If you have a Mini Memory Module and the battery is weak and needs replacement read the WARNING on page 5 of this newsletter. Some very serious consquences can occur if it is not done properly. So read and heed.

We continue receiving calls from persons that are seeking information on the TI-99/4A. So there are a lot of consoles out there, hiding in closets or whereever. We need to find some way to get these owners interested in our User's Group and get them as active members in our group.

This month our resident 'C' language expert, Kevin Daberkow, begins his tutorial series on C language. This is our chance to learn a new language, one that is much faster than XBASIC.

FOR SALE

New, never used, TI 99/4A console with voice synthesizer, recorder, manuals and some software. If interested call: Les Suddick 378-6092

SEATTLE CONVENTION - 1988
Downloaded fron The Source

The third annual convention held 9/[illegible]/88 in Seattle, was a little less hectic than the years before, and a little less crowded. Three highlights of this year's convention, to be repeated I'm sure with upcoming fairs:

1-Videoflex Card by Millers Communications of Seattle. This is a special adaptation of the Geneve which allows the user to place titles on videos. Ideal for editing of news videos. The card and software are ready now according to Dave Miller; all that remains is the documentation. Miller indicated the software would be expanded to versions for the 286 and 386 microprocessors used by PC's and compatibles. Cost: around 10,000 for the Geneve version, in excess of 15,000 for the compatible versions. While of limited use for a home system, still an interesting demo was provided at the Miller Communication booth.

2-MacFlix by Genial Computerware. Software which allows either the /4A or Geneve to display MacIntosh Graphics. Very impressive when viewed on a Panasonic monitor using the 4A; probably even more impressive when shown on a Geneve. Tom Auleta of Cherry Hill, NJ, represented Genial Computerware at the convention. After speaking formally for five minutes about the offerings of Genial Computerware and a short demo at their booth, MacFlix was sold out. A good sign, I think, for all of those who like graphics.

3-Myarc -- Hard drive/GEME/Advanced Basic. Jack Riley of Myarc did a series of three demos, while I "pushed the keys" (my luck -- busperson's holiday!).

- Hard Drive: yes it works. Was demoed on a Geneve using Myarc Disk Manager version 1.25. Believe the current version is 1.12 (? -- others can correct me on the version numbers, I haven't been keeping up with 'em). All the good words advertising the controller were demonstrated. The demo took the form of showing how a hard drive works for benefit of those who have never used one before.
- GEME: All the big letters stand for a Multi-tasking environment (windows for us laypeople). Allows the user to have four tasks running in the CPU at the same time. According to Jack Riley, this is an early version which will be ready in a few weeks. Basic information will be public domain so that programs can be written for the environment. As with any new tool, no software exists which can use the environment: it will have to be created for it.
- Advanced Basic: Version 3.00. Per Jack Riley it was 99% complete -- however, any routine requiring access to DOS or math routines were incomplete. Perhaps the software will be ready by mid-October: the next computer fair.

Speakers at this convention: Scott Darline, GEnie; Jim Horn, CIS; Chris Bobbitt, Asgard software; Tom Auleta, Genial Computerware; Jack Riley, Myarc. Vendors in attendance were similar to last year's list. This year, however, user groups were under-represented: perhaps a sign of the times. HOWEVER, one should not be concerned about underrepresentation as I heard others comment that attendance was better at an event like this than at an IBM fair.

"C"ing is Believing - Part I

by Kevin Daberkow

Last month I asked you the SBTIUG club members for input on what you would like to see in this column. The response was underwhelming to say the least. Consequently, I'm going to do what I darn well please. You lost your chance!

For my first real article on c99 I descided to start simple. The program we will be developing this month will simply write a line of text to the screen. Nothing fancy, but it will get you used to running the c99 assembler and show you a little of the structure of C. I'm trying not to scare you off the first week.

On with the programming! As stated above, our goal this month is to print the following phrase on the screen:

"Programming in c99 is easy!"

A program to accomplish this task is shown below:

```
----------------------------------------------------------

010 /**********************************/
020 /* print a phrase to the screen */
030 /**********************************/
040
050 extern printf();
060
070 main()
080 { printf("Programming in c99 is easy!\n");
090 }
----------------------------------------------------------
```

The above program is a DV/80 file created using an appropriate editor (ie. editor/assembler). If you use the TI-Writer editor, make sure you save the file using the PF command. This will keep a tab line from being appended to the end of the file. Note that the above example contains line numbers. These should NOT be edited into the file, I have included them here only for reference purposes. Lastly, I do not plan on covering all the aspects of c99 syntax. This information can be obtained from Clint Pulley's documentation, or an appropriate reference source (ie. "The C programming language" by Kernighan & Ritchie).

NOTE: All programs will be developed using c99 release 4.

Program explination:

010: Comment lines are delimited using /* */. Any text placed between these markers is ignored by the c99 assembler. It is always wise to place a comment at the beginning of a program explaining its purpose.

020: Program explination.

030: Another comment line.

040: Blank line. It is OK to place blank lines within a c99 program to help break apart various [illegible] This can make reading the program much [illegible]

050: The c99 extern statement is used to provide a reference to an externally defined function, namely printf(). If this statement were not included, an error would occur when the 9900 source code created by c99 was assembled (more on this later).

060: Another blank line.

070: This line defines the starting point of the program. This means that every program MUST have a main() somewhere.

080: The "{" indicates the start of the code residing within main(). The function printf() is a pre-defined function which prints output to the screen (unless some other destination is specified). In this case it prints the string of characters that make up its argument. The sequence \n in the string is C notation for the newline character, which when printed advances the output to the left margin on the next line. If you leave out the \n, you will find that your output is not terminated by a line feed.

090: The "}" indicates the end of the main() function. Execution will terminate at this point.

Assembly & Operation

After you have created the above program, you need to load the c99 assembler. This can be done by using EA option 5 and specifying the name DSKx.C99C. The assembler will ask if you want to include your source code as comments in the 9900 assembly source file it will create (I usually answer no). It will also ask you if you want inline push code (again answer no). It now will prompt you for the input and output file names. As I mentioned earlier, the c99 assembler creates 9900 assembler source code. This source code will now need to be assembled using the TI assembler. The process is shown below:

```
    DSKx.PROG;C
        |
        +--(c99 Asmbl)--> DSKx.PROG/SRC
                                 |
                                 +--(TI          Asmbl)-->
DSKx.PROG/OBJ
```

Once the object file has been created without any errors, we can load an run our program. Using EA option 3 load the following files:

```
        DSKx.PROG/OBJ  (your programs object file)
        DSKx.CSUP      (necessary C support files)
        DSKx.PRINTF    (pre-defined print routine)
```

Once the three above files have been loaded, you can run the program by entering the program name START. The program should run displaying our little message in the top lefthand corner of the screen. The question (C99 RERUN Y/N) will also be displayed. Entering "Y" will cause the program to be re-run. Entering "N" will cause return to the console startup screen.

There, that wasn't so hard was it? Next time I will be giving you a program with a little more meat on it, but for now try the program above and get used to the process of creating running c99 programs.

Till next time......

RELATIONAL EXPRESSIONS

by Jim Peterson

reprinted from PUNN newsletter Aug 1988

What are "Relational Expressions", you might say? The "blue book" that came with your computer says nothing about them, and most of the programming tutorial books on the subject are equally silent. If you waded through the computerese and mathematese text of the User's Reference Guide, you found them discussed on page II-14 under Relational Expresions and on page II-51 under IF-THEN-ELSE, but you probably didn't realize their potential. Then, you graduated to Extended Basic and found those easy-to-use, in the clear logical expressions AND, OR, NOT and XOR, and you looked no further.

So, what can a relational expression do? Nothing that can't be done without it. But it can often do the job so much more compactly, so much more efficiently, and therefore so much faster. So let's learn to use them. And let's learn in plain English, not computerese. The following may not be technically correct, but it's the way it all works out.

First, every expression has a true/false value, which is entirely different and separate from the values of the variables or numbers or strings it contains. On the TI-99/4A, a false statement has a value of 0, which is easy to remember, A FALSEHOOD IS WORTH NOTHING. Unfortunately, a true statement has a value of -1, which doesn't quite fit in too well. On some other computers you may have learned that a true expression has value of +1, but on the TI it is -1. So, if in the expression obviously F does equal 7, and f=8 has a value of 0 because it is not true.

Second, when an IF statement refers to a variable without an "=" sign, it means "<>". For instance, IF X THEN 1000 means "if X is more or less than 0, if it is not 0, if it is anything other than 0, then go to 1000"

Third, the computer will try to use the expression mathematically before it tries to interpret its true/false value. Remember that everything within parentheses is worked first. For instance ...X=1 :: Y=2 :: IF (X=1)+(Y=2) THEN 1000... Since both are true, this works out to IF(-1)+(-1)<>0 THEN 1000, and since -1 plus -1 is not 0, we go to 1000. On the other hand, X=1 :: Y=2 :: IF X=1+Y=2 THEN 1000 will first be calculated as X=1+Y, which comes out as X=3, and then as X=3=2, which has a true/false value of 0 (false) because X=3 has a true/false value of 0 (false), not 2!

Finally, always remember that a variable keeps its previous value until the calculations of an entire equation is competed. X=3 :: X=X+(X+3)*X-X/X^X+(X=0) is worked out as X=3+(3+3)*3-3/3^3+(3-0).

Now that you have assimilated this vast knowledge, how can it be used? The most common way is in the expression IF (x=1)+(y=2) THEN 200. In this case, if it is true that X=1 but Y does not equal 2, then -1+0 is <>0 so you go to 200. If X is not 1 but Y=2, then 0+-1 is still <>0, and if X=1 and Y=2 then -1 plus -1 is still <>0, so you still go to 200, but if X is not 1 and Y is not 2 then 0+0 is not <>0 so you do not. Of course in Extended Basic, you could simply write IF X=1 OR Y=2 THEN 200.

If you want to go to 200 only if X=1 or if Y=2 but not if both are true, then you can write IF (X=1)+(Y=2)=-1 because either -1 plus 0 or 0 plus -1 will equal -1. In Extended Basic, this is the "exclusive OR", IF X=1 XOR Y=2. And if you want to go to 200 only if both are true, you can write IF (X=1)+(Y=2)=-2, or more commonly IF (X=1)*(Y=2) because if either or both are not true the multiplication by 0 will give 0. In Extended Basic, this is IF X=1 AND Y=2.

You can even write more complicated versions, carefully watching your parentheses, such as IF (X=1)+((Y=2)*(Z=3)) which translatates to IF X=1 OR Y=2 AND X=3. So, if you're programming in Extended Basic, why bother with all those parentheses? Why not just use OR and AND? In the above cases, that is true. But you have not yet begun to see the power of relational expressions!

Since the true/false value is a numeric value, it can be used in calculations, and it does not have to be used with an IF statement. For instance, this is a statement that I have used within a loop to alternate control of the two joysticks between two players...X=X+1+(X=2)*2 :: CALL JOYSTICK(X,Y,Z). In this, the first time around, X has not been given a value, so the equation is read X=0+1+(0=2)*2 and since 0 does not equal 2, 0+1+(0*2)=1 and joystick 1 is activated. Next time around, X=1 and X=1+1+(1=2)*2 gives a value of 2, since 1=2 has a true/false value of 0. The third time around, X now has a value of 2 and X=2+1+(x=2)*2 which is worked as X=2+1+(-1)*2 and then X=2+1+(-2) which is X=2+1-2 and X=1 again.

If you think that's neat, look at this one from the Airport Area UG newsletter, credited to to Robert Cooley, X=X=0 :: CALL JOYST(X+2,Y,Z). Here, the first time around, X does equal 0 so the statement X=0 has a true/false value of -1 so X=-1 and X+2 activates joystick #1. Then X=-1 so X has a true/false value of 0, so X=0 so X+Z activates Joystick #2 ... and so on! Of course, you could also write IF X=1 THEN X=2 ELSE X=1 if you prefer.

Another example: A=INT(10*RND) :: B=INT(10*RND) :: FOR J=A TO B. Now if the random B happens to be smaller than the random A, the loop falls through with nothing happening. You could add a line IF A>B THEN T=1 ELSE T=-1 and FOR J=A TO B STEP T. But why not just FOR A TO B STEP (B<=A)+ABS(A<=B). If B<A then -1+ABS(0) gives a STEP -1 to count backwards, but if A<B then 0+ABS(-1) gives STEP 1 and if A+B then 0+ABS(0) equals STEP 0!

Another example: 100 INPUT "SCREEN COLOR ? ":S :: FOR SET =1 TO 14 :: X=SET+1-(SET>=S) :: CALL COLOR(SET,X,X) : NEXT SET. That changes the character set to colors 2 to 16 in sequence, skipping over whatever color has been selected for the screen.

Strings can also be manipulated. 100 P$(1)="S" 110 INPUT "HOW MANY ?":N :: PRINT "THE PRICE IS" STR$(n)"

DOLLAR"P$(ABS(N>1)) :: GOTO 110. Or more efficiently 100 INPUT"HOW MANY? ":N :: PRINT "THE PRICE IS "STR$(N)SEG$(DOLLARS,1,7-(N>1)) :: GOTO 100

However, it is also possible to overdo it. The following routine will read key input to move the cursor around the screen in all 8 directions, stopping at the borders or travelling along them if struck diagonally. However, it requires so many calculations for each key input that it is not the fastest method of accomplishing this.

```
100 CALL CLEAR :: R=1 :: C=3
110 CALL KEY(3,K,ST) :: IF ST=0 THEN 110
120 C=C+((K=83)+(K=68)+(K=67))*(C<32)-
    ((K=87)+K=83)+(K=90))*(C>2)
130 R=R+((K=90)+(K=88)+(K=67))*(R<24)-((
    K=87)+K=69)+(K=82)*(R>1)
140 CALL HCHAR(R,C,42)::GOTO 110
```

So for compact, efficient programming, learn to use the relational expressions. But also learn when not to use them.

Jim Peterson, TIGERCUB

SHORT ROUTINES.

reprinted from Topics - LA 99ERS

Here are three short routines I found in the Newsletters. I thought you might find interesting.

```
90 ! WEIRD SPRITE DEMO
100 CALL INIT :: CALL CLEAR :: CALL MAGNIFY (4) ::
    FOR B=1 TO 10 :: FOR A=100 TO 255 :: PRINT A ::
    CALL LOAD(-31873,-A) :: PRINT CHR$(B); :: NEXT
    A :: NEXT B :: GOTO 100
```

and

```
90 ! RANDOM MUSIC GENERATOR
100 RANDOMIZE :: DEF X=INT(RND*7) :: FOR B=0 TO 6
    :: A(B)=VAL(SEG$(247262294330349392440",(B+1)
    *3-2,3)) :: NEXT B :: B,C,D=X
110 CALL SOUND(-900,A(B),0,A(C),9,A(D),19) :: D=C
    :: C=B :: B=X ::GOTO 110
```

These two were found in TI Focus, Newsletter of CHANNEL 99 U.G. Onterio, Canada.

And from Guilford 99er Newslette, via the hunter Valley 99er U.G. we have:

```
90 ! NOISES
100 FOR Z=-1 to -8 STEP -1
110 CALL CLEAR
120 CALL SOUND(1000,Z,0)
130 CALL SCREEN(-Z+2)
140 PRINT "NOISE NUMBER";Z
150 CALL SOUND(1,Z,30)
160 NEXT Z
170 GOTO 100
180 END
```

WARNING!!!

If you have TI's Mini Memory Module, and it no longer works, BEFORE trying to replace the Lithium cell, REMOVE the cell by CUTTING it out!!!

DO NOT APPLY HEAT TO THE CELL!!!

CLEAN THE AREA AROND THE REMAINING SOLDER CONNECTIONS THORO/GHLY, THE DEPOSITS LEFT BVY A LEAKING CELL CAN AND DO EXPLODE!!!

If it were not for my safety glasses, which I use while soldering, I would be in a hospital emergency room right now! Instead I could just scratch off the now cool solder that splashed on the lens and everywhere. I did cut out the cell but the deposits left by the leaking cell exploded, sending solder as far as six feet! Please read and heed this warning! I would like you all to be able to see what you are typing in the future...

This bit of advice from Gerald P. Domroski of QUAD CITIES COMPUTER CLUB, Iowa. Thanx

```
*****************************************
*                                       *
*   MURPHYS RULE:                       *
*                                       *
*   If in the course of six months      *
*   there are three decent programs     *
*   on TV, they will all be on at the   *
*   same time on different channels.    *
*                                       *
*****************************************
```

DISK DRIVE WOES

by R.M. Bies

As our disk drives age, they become subject to problems which soneone with the proper equipment can correct. (you have an indication of this problem w;en aathe drive will read and write reliably on a disk recently formatted on it, but the data so written cannot be read in another drive.). Also, with many of the half-height double sided drives, the heads are fragile, and if caught on the disk envelope, can be pulled out of position. Generally, the cost of replacement heads and the labor of replacement and alignment is greater than the cost of a anew drive.

There are also less obvious sources of trouble not so exotic to remedy. I will deal with three which I have encountered: insecure mounting of the 12V regulator on the power-supply board, faulty power connections, and gummy head rails.

If it looks like the drive or drives are bogging down (particularly in twin half-height installations), and the drives ultimately stop and crash, it may be worthwhile to check the mounting of the 12V regulator. This is a TO-3 on the power-supply board, held down with screws. The board is its heat sink. I have found that tightening a loose mounting screw can alleviate this problem. (tighten with care, of course.) You know the power-supply is being overloaded when the measured voltage on the 12V line on the drive drops off well below 12V as the drive slows.

If that wasn't it, and particulary when moving the drives around sometimes seems to fix it for a while, check the connections in the four power lines to the board on the disk drive, again, particularly in a twin drive installation. These connections come in two slightly different sizes and for some reasn the male pins seem to always be of the smaller size, the female of the larger size. It may help to spread the male pins slightly, or to close the female connectors slightly. They are not gold-plated so are subject to oxidation. Contact cleaner may also help.

Now for the most obscure. One of my drives regularly would not read certain tracks on a disk, but the disk worked fine in the other drive. That the drive would read most tracks suggested that the electronirs was OK, that the other drive would read the whole disk suggested that it was not an ordinary alignment problem. It look like a mechanical problem. Nothing seemed out of place with the drive removed, no foreign objects present. Yet, the heads seemed to offer slightly more resistace toward the end of their travel. A drop or two of lighter fluid on each rail with the assembly exercized by hand back and forth seem to yield a smoother action. Indeed it worked. The rails were gummy enough at the exctremes of travel to defeat the electronic positioning procedure.

ONE(+) LINERS FOR GRAPHING

by Tony Falco

reprinted from tne M.U.N.C.H newsletter

Graphing is an important topic in mathematics education today. Computers and computer graphics will make it an even more important topic in the future. The following one and two (surry!) liners can hopefully help out some middle school or high school students with some of the more basic concepts.

The first program gives practice with the process of plotting points. At the "X=,Y=" prompt the user enters two numbers separated by commas. The program will show that point if its coordinates will fit on the screen. Bear in mind that all the programs here are low resolution and plot only integer points.

The second one graphs the function Y=10*SIN(PI*X/14). Users can experiment with other functions by simply changing that expression. Try Y=ABS(5-ABS(X)) for example.
The third and fourth programs are very similar. The third one allows the user to experiment with sine waves. At the prompt you enter values for A and B, again separated by commas, and see how these numbers change the period and amplitude of the wave. The last one graphs shapes know as parabolas. At the prompt enter values of A,H, and K, once again separated by commas, and see how these values affect the shape, position and orientation. Values of A between -2 and 2 (decimal fractions are fine) work best. Again bear in mind that with low resolution many points do not get plotted, but this is exactlu what one does with paper and pencil. We plot a few points and infer the position of the rest.
For a neat display run using CALL CLEAR::RUN

```
1 FOR D=1 TO 2000::NEXT D::CALL CLEAR::INPUT "X=,Y=":X,Y::IF
  ABS(X)>15 OR ABS(Y)>11 THEN 1 ELSE CALL HCHAR(12,1,43,32)
  ::CALL VCHAR(1,16,43,24)::CALL HCHAR(12-Y,16+X,30)::GOTO 1
```

```
1 CALL HCHAR(12,1,43,32)::CALL VCHAR(1,16,43,24)::FOR X=-15
  TO 16::Y=10*SIN(PI*X/14)::CALL HCHAR(12+Y*(ABS(Y)<=11,16+X
  ,42-(ABS(Y>11))::NEXT X::GOTO 1
```

```
1 CALL CLEAR::INPUT A,B::CALL CLEAR::DISPLAY AT(1,17):"Y=
  &STR$(A)&"*SIN(2*PI/"&STR$(B))&")"
2 CALL HCHAR(12,1,43,32):: CALL VCHAR(2,16,43,23)::FOR X=
  -15 TO 16::Y=A*SIN(PI*X/B)::CALL HCHAR(12+Y*(ABS(Y)<=11)
  ,16+X,42-(ABS(Y)>11))::NEXT X::GOTO 2
```

```
1 CALL CLEAR::INPUT A,H,K::CALL CLEAR::DISPLAY AT(1,7):"
  "Y="&STR$(A)&X-";STR$(H);")^2+";STR$(K);
2 CALL HCHAR(12,1,43,32)::CALL VCHAR(2,16,43,23)::FOR X=-15
  TO 16::Y=A*(X-H)^2+K::CALL HCHAR(12+Y*(ABS(Y)<=11),16+X,
  42-(ABS(Y)>11))::NEXT X::GOTO 2
```

LET'S TALK RAM DISKS PART 6

by John F. Willforth

reprinted from the WEST PENN 99'ERS CLUB

Well Its May 1988, and I've been writing about RAM DISKS for six months now. I've only lightly covered the "BIG FOUR", HORIZON, HRD+, MYARC, and CORCOMP. Each of them is availale now, and most if not all the bUgs have been ironed out. I thought that if I stretched it out long enough, that DATABIOTICS would have their unit out, running, some deliveries under their belt, and be picking up steam in the RAM DISK market for the TI. Well there is STEAM!

I'm not going to get into all the details,(it's had to know what is true) but in order to give those of you who are chomping at the bit for the "advertised" GRAND RAM, I'll review an article by a guy who has two of these rascals, Ken Hamai of the Users Group of Orange County, CA. He issued many of his own opinions below, and where this was done, I'll put " " around the text.

Ken says that he's been beta testing a pair of the GRAND RAMS from DATABIOTICS, and "they have really gotten it together with the software. It has been unfortunate that this product has had so many delays in manufacture, but in a way, looking back over the last 6 months, I have to admit that the software six months ago was terrible compared to what it is now." Ken then compares the Geneve, and infers to the long incubation, nativity, infancy, and it's nearing puberty even now, as a justification for the GRAND RAM'S long time in development. I personally don't find that the comparison is there. It takes more to develop a machine that emulates an older technolog, and maintain compatibility with all peripherals that plugs into the same SYSTEM BUS, as well as is able to keep up with the best of what is being produced by the monied personal/home computer manufacturers of today than it is to follow on the coat-tails of people like LOU PHILLIPS, RON GRIES, JOHN CLULOW, DAVE ROMER, and the folks at CORCOMP.

The West Penn 99'ers attempted to purchase two RAM DISKS from DATABIOTICS as long ago as TWO years. We were buying them as part of the NATIONAL ADVISORY PANEL (NAP), which was set up by DATABIOTICS to get software/hardware into the hands of key people in the TI family for the purpose of reviewing for the mutual benefit of DATABIOTICS and Users Groups. This was to be the GRAND RAM yes 2+ years ago not six months ago. REMEMBER? We did get our money back about a year ago after being without it for over 11 months. We just live right!

Enough, I think we need all the support we can muster, and we in turn must support those who take the plunge and invest thousands in an orphaned computer. We have to as editors of newsletters, include the complete picture so that you get the most for your dollar and are informed about what is going on in the marketplace.

Ken reports that you can use the GRAND RAM as both a RAM disk and as a print spooler, with the sizing being done by a CONFIGURE program not unlike that available for the HRD, [illegible] having of course the added ability to configure the CLOCK, the PRINT SPOOLER as well as of course the RAM DISK. Ken says that you can have up to seven of these GRAND RAMS in a PEB, and "use them all". He set his 512K (max. unit size) card up as 1-DSDD, 1-SSSD, and a 50K spooler. A 50K spooler should be more than enough to print out most doc files, and return the TI CPU to you for further processing in less than two minutes. The printer may start to bother you after a half an hour of printing while you're playing VIDEO CHESS.

The drives can be designated 1 thru Z, and this should come out to 35 logical units and if that isn't enough, you better look to a winchester drive.

The GRAND RAM has "HOT KEYS", which means you don't have CALL LOADS. "You just punch the keys and WHAM! The program you want is up and running!" This is because the unit has a built-in interrupt timer chip, and each card has 14 HOT KEYS. These keys do such things as turning your clock on/off, print spooler on/off, power up program on/off, as well as disabling interrupts, and seven keys (programmable) for program loading. Remember each GRAND RAM in the PEB has these 14 keys.

The unit comes with a modified "MENU" program from John Johnson, updated version of 4A TALK, and the word processor is modified (which WP, I don't know) to run on it. Disk Master I (from Databiotics) is provided but at this time cannot access drives 7 thru Z. John Birdwell's Disk Utilities 4/Gr supports this unit according to Ken, and "does it all" I believe that if I were to get a GRAND RAM, I would write to John Birdwell at the same time I wrote the check for the hardware.

Speaking of hardware, the price is up a bunch since you read about that $99 price last summer for a 64K version ($150 now). Be careful about buying this unit right now. Ask the guys in Dallas, Texas. It's really expensive when you don't get the hardware!

TIP TO SET DISK DRIVE SPEED

reprinted from MICROpndium Feb 86

The Winnipeg 99/4 Users Group offers a tip on checking and setting the speed of a disk drive. (we recommend that users apply it with caution and refer to disk drive manuals for specifics.)

To begin, we're assuming that you suspect a problem with your drive. The major symptom would be difficulty in loading a program from disk.

Remove the drive from its enclosure, without disconnecting any wires. Locate the strobe wheel and check to make sure it has a 60 Hz. mark on it. Refer to the drive manual to locate the speed control pot on the circuit board. Illuminate the area with a fluorescent light and attempt to load a program while watching the wheel. (those involved with auto mechanics will recognize the similarities between this procedure and checking the timing of a motor.) The marks should appear to stand still if the speed is correct. If not, adjust the speed control pot until the marks appear to stand still.