

# New Hampshire 99'ers

## June 1986

### Newsletter



NH99UG NEWSLETTER - PO BOX 5991 - MANCHESTER, NH 03108-5991

VOL. 4 NO. 6

#### ««LAST MINUTE»»

The meeting of June 2 focussed on the election of officers. The nominating committee had prepared a list of proposed candidates, as per the Club's constitution. Since there were no willing nominees from the floor, the slate passed by voice vote. The officers are as follows:

- Curtis Provance, President
- Mike Mannion, Vice President
- Richard Quimby, Treasurer
- Ellen Rule, Secretary

In Curtis's absence, Chris A once again chaired. Many thanks!

Richard Bailey announced that he has a limited supply of disk drive power supplies for \$15. For those constructing their own second drive, this price can't be beat!

Mary Beth from Obis visited the meeting to assist members in obtaining hard-to-find ribbons, as well as disks and quality paper. Remember, Obis delivers, which along with their exceptional quality and prices makes a great deal. See their ad in this issue.

Ellen (a.k.a. yours truly) demonstrated how to dismantle a cartridge and clean and reassemble it. This has been found to be helpful in preventing and avoiding lock-ups and other system nasties.

Richard B. demonstrated Joypaint, a graphic arts program. This program has many features of Graphx and some of CSGD and seems to be very easy to use. (See Richard's review for more on this graphic design aid.)

The raffle this month was for a box of disks or computer cassettes, won by Ellen Rule. The equipment fund is GRADUALLY growing, so keep up the raffle support!

file closed---

Ellen Rule, Secretary



#### FOR SALE

TI 300 Baud  
Acoustic  
Modem

ELLIOT HARDY  
603/483-2702 (eve)

#### ««FROM THE PREZ»»

I'll make this short and sweet:

Many thanks to retiring club officers John Larmon and Helene LaBonville. As most of you know, Helene is retiring from 30 or so positions she held (we've talked her into keeping the other 17). I would like to thank Helene on behalf of the club for making our last year so spectacular!

I am happy to have Ellen Rule continue on as secretary and Richard Bailey as librarian. They also perform much of the "behind the scenes" work needed to keep us functioning.

A hearty welcome to Mike Mannion (new VP) and Dick Quimby (new treasurer). I have worked with both quite a bit and think we can all make a good team.

Finally, thank you for your vote of confidence.

Next meeting (July 7th) we will review two software items: DISKASSEMBLER by Millers Graphics and FUNLWRITER by Funnel Web Farm of Australia.

**I SAW IT!** I saw the new computer working at the recent Boston Computer Society meeting. I can't talk about it here; ask me at the meeting!

Please do me a favor and support Bonanza if you can. I know many of us eat there before the meeting - thanks to you all. Anyone who doesn't - the food is good, prices are reasonable, and most importantly -

**THE MEETING ROOM IS FREE!**

I know I don't cover enough BASIC to suit some of you. If you have a question or want to know how to do something, please call or write. I will be happy to help you. The same offer goes for any question on other languages, the only caveat being that I may have someone else respond. No matter what, we will get back to you.

I hope to see you all July 7th. On with the show!

**FOR SALE**

Disk drive power supplies....	\$15
Epson Printer (PIO).....	B.O.
Peripheral expansion system.....	B.O.

**Richard J. Bailey**  
 68A Church Street  
 Gonic, NH 03867  
 (603) 332-7855

# RANDOM RAMBLINGS #25

*Helen*

I have good intentions when I prepare this column (yes, I really have attempted to prepare them!); I jot down notes throughout the month, but invariably manage to lose them. What results is, just what you get... Random Ramblings! Hope you have been able to follow thru the maze of the some 50,000 words which I have keyed in the last two years. What follows, then, is Random Ramblings #25, my last column as editor...

>>>>Again, thanks to Chris Agrafiotis for chairing the Nominating Committee and directing the last meeting. He prepared some neat little ballots which, as it turned, were not used as the nominees were elected unopposed. To recap, the newly elected officers for 86-87 are:

- President: Curtis Alan Provance (603) 424-7624
- V-President: Mike Mannion (603) 880-7028
- Secretary: Ellen Rule (603) 746-4017
- Treasurer: Richard Quimby (603) 889-0339

Richard J. Bailey was asked and will continue to serve as our Disk Librarian. Thanks to Richard, the NH99UG distribution disks are among the classiest you'll encounter. The Tape Library has been turned over to Ellen Rule. She has already prepared an inventory which you will find in this issue. *"As you can see, the overall content and quality is pale beside our Disk Library. Since some of the members have no disk drive, they are missing out on one of the major benefits of the club (meaning the software library). In order to enhance the quality of the cassette library, members are encouraged to submit public domain or freeware programs on cassette tape to the library. Remember when your disk drive was only a gleam in your eye? Let's help those still stuck in that position, and at the same time build up the quality and benefits of the NH99UG!"* EJR Please contact her for further information.

>>>>Apparently no one was scheduled to bring a system to the June meeting! Luckily we were able to reach Werner Neibel in time. A hearty thank you must go to Werner and his family... it's no easy task transporting a TI system.

As you know the club now owns its own system. I would like to see it loaned to a member who currently only has a console. While in their custody, he/she would derive the benefits of a disk system and in return would be required to transport it to each monthly meeting. What do you think?

PLEASE RETURN ALL LIBRARY MATERIALS YOU MAY HAVE SUBMITTED ANY! Remember, these materials are loaned on a monthly basis only and you are expected to return them at the next meeting. Please note that the CATALOGS which we display at the meetings are NOT available for loan. They are our only copies and are our only source of reference. All club property is properly labelled... PLEASE RETURN THEM!!!!!!

>>>>The latest word from TI regarding their Diagnostics program is that they are in the process of updating the active UG list. The NH99UG has received and returned our survey.

>>>>MYARC has finally introduced the GENEVE Model 9640 Family Computer. Curtis saw a working model at a recent Boston Computer Society meeting and will report his findings at the July meeting. For those who can't make it, GENEVE features IBM PC XT-style keyboard with 640K RAM patches for TI-Writer and Multiplan, 80-column display, BASIC 3.0 and MS-DOS operating system. It uses a TI9995 processor chip operating at 12 MHz. It also features an enhanced graphics mode and will run up to six times faster than the 4A. Suggested list price for the computer is \$495 with orders being taken now for shipment date of July 30. For further info, contact MYARC @ (201) 766-1700.

>>>>Mary Beth Olesen of DBIS CO. submitted a quotation to us (in response to an inquiry at the June meeting) for #10 201b regular non-overlapping envelopes: 50 @ \$15; 100 @ \$25; and, 250 @ \$40. Of course, larger quantities are available at further discounts. (see the DBIS ad on cover page.)

>>>>NAMELOC SOFTWARE (3971 S.E. Lincoln - Portland, OR 97214) sent a flyer announcing three new programs for the TI. All require 32K, XB, DD, and an Epson compatible printer.

LABEL-MAKER allows up to 5 text lines, four different fonts and several combination options working with standard labels.

TRIVIA-FILE prints calendars from 1601 to 2100 to screen or printer and includes a WIZFILE history trivia quiz and QUIZMAKER.

CATALOPE prints a disk envelop with catalog on the outside. Each is priced @ \$5 postpaid with all three going for \$10 postpaid.

>>>>If you found Chris Agrafiotis' tale on Printer Buffers intriguing, you'll be interested to note that MULTI VIDEO SERVICES (POB 246 - E. AMHERST, NY) carries a similar buffer @ \$65 and the LA Computer UG (P.O. 3547 - Gardena, CA 90247) sells an internal 64K Epson Print Buffer for \$45.

>>>>Asgard Software (POB 10306 - Rockville, MD 20850) announced TI-99/4A - GRAPHX Pictures. This four disk pkg of art work can be enjoyed without having to own any drawing program with the use of a Slideshow program written by Paul Charlton. Price is \$16.50 postpd. GP requires either E/A, XB, or MM, 32K and DD. Either GRAPHX or TI-ARTIST is required to alter or add to the pictures. We hope to show this 320K of artwork at the July meeting.

## ◀◀FINAL WRAP-UP▶▶

I am breaking with tradition in not thanking a long list of people for their help, guidance, support and encouragement over the last two years. To be honest, the list is just too long and there is always the chance someone will be left out.

But there is one person who is, indeed, so important it would be impossible to leave them out... and that person is you. Without your kindness, support, helpfulness, enthusiasm and dedication to the TI and the NH99UG Community, there would be no NH99UG Community.

To paraphrase Tiny Tim, "Thank you, every one!" The NH99UG is still here, happy and healthy, supporting a great home computer thanks to you.



### TI99/4A PLUS PERIPHERALS EXCELLENT CONDITION

- CONSOLE.....\$ 45
- PES.....\$275
- RS232 (TI)
- 32K CARD (TI)
- DISK DRIVE (TI)
- DRIVE CONTROLLER CARD (TI)
- GEMINI 10X PRINTER.....\$ 125
- CASSETTE PLAYER.....\$ 25
- SOFTWARE.....\$ 50

(TI-WRITER; MULTIPLAN  
EXT.BASIC; PRK) +)

ENTIRE PACKAGE.....\$450

**SAVE \$70!**

**CALL TOM CONCANNON  
603/645-2371 (WORK)  
603/669-7488 (HOME)**

CONSTRUCTION OF THE  
HORIZONS RAMDISK KIT

Richard J. Bailey  
68A Church Street  
Gonic, N.H. 03867  
NH99ER USER GROUP

The Horizons RAMDISK kit is a great way to get a ramdisk without a huge cash outlay; the kit is currently priced at \$53. What do you get for that price? 1st you get one of the highest commercial quality circuit boards I've seen with parts locations silk screened on the front (component) side of the board. 2nd you get the RAMDISK reference manual, DM1000 manual, and the RAMDISK construction guide, which, while it's not Heathkit, is easy to follow for anyone with some kit experience. 3rd you get three disks. The RAMDISK operating system (or ROS) along with memory test program, DM1000, user definable CALL routine example, etc., is on one disk. DM1000 is supplied by special agreement with the Ottawa user group and can be accessed anytime with the CALL DM command. The other two disks have the source code for the ROS.

If you decide to try to build the kit, keep in mind that there is no warranty on the kit (there is a 3 month warranty on the assembled RAMDISK). This is not an uncommon practice as Horizons has no control over the quality of the parts you buy or your ability to assemble the kit. If you don't think you can collect all the parts needed for the kit or you don't want the hassle, you can buy all the parts needed for a SSSD RAMDISK kit for \$72 or \$105 for a DSSD RAMDISK from Bud Mills Services. His parts list and prices are included with the kit. For those who don't want to take the time or effort to build the kit, assembled versions are available at higher prices.

If you are careful there should be no problems assembling the kit but if you do run into some problem, there are phone numbers in the manual to put you in touch with Horizons. The construction guide is step-by-step and quite clear. There are some things that require extra attention. You should pay attention to the physical location of the two LEDs shown in figure 3 of the construction guide, making sure that they don't protrude beyond the edge of the board. Also pay close attention to the direction and type of all diodes. Note that the tantalum capacitors (C2,3,4) are not cylindrical type but solid slug "drop" type. The hole spacing is too close together to easily use Sprague 150D cylindrical type so get the type shown in the figures. On the i.c. sockets, be sure to get ones with a solder barrier on the pins to prevent solder from flowing into the socket which would block the i.c.s from being inserted.

The SSSD version has about 650 solder connections, all on the circuit board. To get a DSSD version you have to "piggy-back" 11 of the RAM chips and lightly solder all corresponding pins, except pin 20, which is the chip select line, together. There are about 300 pins to be soldered together in pairs. Be careful and follow the wiring table for the chip select lines carefully as the pins aren't wired in numerical order.

I don't recommend deviating from the instruction with the following exceptions: I used 5564PL-15 rams instead of the 6264LP-15 rams specified in the parts because of lower stand-by current drain of the 5564's. Because they

draw 100 times less power than the 6264's I could use a 3.6 volt "AA" lithium battery and blocking diode for back-up. This combination should keep the memory energized for about 8.5 years. Using the lithium battery is only practical with the 5564 rams so I don't recommend this change unless you can find these rather uncommon chips and expensive lithium battery at a reasonable price.

If you use the RAMs and the 3 batteries specified in the instructions for maintaining the memory during the time the computer is off, there is a design problem. Those who follow the needlessly complicated instructions for selection of the charging resistor will find there is a good chance that they will lose anything stored in the memory at the most inopportune moment. The problem is that the charging current is too low to charge the "AAA" nickel-cadmium batteries specified. If you're familiar with charging nicads, you know that the proper charging current is between .05 and .1 times the ampere-hour rating of the cells. "AAA" nicads are rated 180 MAH (milliamp-hour) or .18 AH. The recommended charging current would be .009 to .018 ampere. Following the instructions you will get a charging current of .0016 to .0026 which is much too low. To correct this problem you can simply replace R9 with a wire and change R3 to 68 ohms. This will give a charging current of about .012 amperes, right in the middle of the acceptable range. At this charging rate the batteries can be left on charge forever with no ill effects. If this simple change is made the card will work perfectly.

Those who want to find more information on charging nicads can refer to nicad battery data books published by G.E. or several other battery companies or check back issues of some of the "ham" magazines like 73 or CQ.

After the RAMDISK is assembled it should be defluxed. Don't let the deflux fluid drain off the edge connector side of the board as it can leave a film that could give you contact problems. Hold the edge connector up while defluxing and wipe it carefully with a lint free paper towel before it dries to make sure. The assembly time for the RAMDISK kit will be between 2 hours and infinity depending on your abilities.

After you have finished assembling your RAMDISK kit and double checked all solder connections comes the test of fire! (Probably the wrong expression to use in this case.) I plugged my RAMDISK in and the system locked up when I tried to do a disk access to load the ROS. After some 2 hours I located the problem. The RAMDISK would not run with my CorComp RS-232 card plugged in but would work perfectly otherwise. It turned out to be my particular RS-232 card and it will work with all others. I got around this problem by swapping RS-232 cards with another system that doesn't have a RAMDISK.

At this point I should print the following statement from Horizons: "...make clear the point that you DID NOT follow the construction guide and are NOT evaluating the operation of a typical Horizon Ramdisk." Well this is true but I feel that my card works better for several reasons that I have mentioned above. The point is that if you deviate from the instructions, you have to know what you are doing or you stand a good chance of ending up with a non-functional board.

In operation the Horizon RAMDISK is simplicity itself!

There are about 8 easy to remember CALL commands. CALL DN(1), for instance, makes the RAMDISK DSK1. These commands can be used either in the immediate mode or can be used in a BASIC or XBASIC program.

As far as compatibility with existing programs, any program that uses a non-standard disk access routine or where disk access timing is critical (like some assembly language programs) may not work. The reason of this is the RAMDISK "disk access" time is 20 times faster than a mechanical disk drive. The following is a list of programs that I have tried to determine whether they will work or not.

#### COMPATABLE:

- QUICK-COPYer II
- Disk Manager II
- DM1000
- JOY PAINT '99
- FUNLWRITER
- GRAPHX
- probably all basic or xbasic programs

#### NOT COMPATABLE:

- BA-WRITER's "SD" function
- Advanced Diagnostics
- CorComp's PDM cartridge
- possibly any asm. lang. program using its own DSR
- TI-ARTIST

Using Danny Michael's screen dump with the interrupt switch can cause the computer to lock-up occasionally. If you have the RAMDISK in your system there is a possibility that trying to use the interrupt switch will clobber the ROS in the RAMDISK. Fortunately the instructions give you step-by-step directions on how to recover from this sort of problem.

One application that I like (as librarian for the New Hampshire User Group) is that you can greatly decrease the time needed for making multiple copies of a disk. Copy the original to the RAMDISK and use that as the master. The master will be read at about 100 sectors per second, not enough time for the copy drive to turn off in between write operations. Another application that has more universal appeal is I have made a disk of all the programs I use often and I load this into the RAMDISK. Now anytime I turn the system on I have all these programs available from a loader program I included on the disk.

#### Conclusion

I would highly recommend the Horizons RAMDISK kit to anyone who has some kit experience and the simple tools needed to assemble it. It behaves exactly like a normal disk drive in nearly all respects, making it amazingly easy to use. I would rate it "A+" in documentation, quality, value, and ease of use. For performance I would give it a "C" because of the problem with the charging circuit but if this is corrected as I have described above, I would give it an "A+" on performance as well. The more you use the Horizons RAMDISK, the more you appreciate it.

## YOU'RE KIDDING, RIGHT?

Home Computing Journal  
A Review by Ellen Rule  
NH 99'ers

The long-awaited Home Computing Journal (herein-after referred to as HCJ) and the accompanying On Disk have finally arrived. Frankly, I'm not impressed. In their classic style, the guys in Eugene, Oregon have left the users waiting and wanting.

The first noticeable change is in the format of the publication. Instead of the familiar magazine-style cover and multi-colored pages of Home Computer Magazine (the lately deceased forerunner of this Journal), HCJ presents a monochromatic, "laser-printed" newsletter-style format with a grand total of 32 pages. This is perhaps related to the move by Gary Kaplan from the Editor's chair to Editorial Consultant. Does this change in figureheads mean things will be different for HCJ subscribers? I doubt it; let me tell you why.

First, I don't consider 32 pages a sizeable publication, especially for a quarterly rag covering five different brands of home and personal computers. Magazines such as Compute! and Family Computing manage to address as many units with more pages on a monthly basis, why not HCJ? And don't argue content; three programs with versions for each system, plus one program for each individual computer, just does not measure up. While the afore-mentioned competition may not contain more actual programs, the articles on telecommunications, language tutorials, reviews and the like (as well as the "controversial" advertisements) are noticeably lacking in HCJ when the comparison is made.

And where are the program listings? I suppose that with the companion disk, the publishers felt it unnecessary to include them. As a multi-system user, I feel like I've been screwed! Having chosen the On Disk for one of my systems, I had planned on keying in any interesting-looking listings on the other. Guess not. It doesn't appear that there is a provision for this situation, either, short of buying another copy of the same issue with the desired On Disk. At \$25.00 an issue, this is no small potatoes!

As a former 99'er Magazine reader (the forerunner to the forerunner of HCJ), who watched my one-year subscription to the sporadically-produced Home Computer Magazine extend into two, I'm finally fed up! If I'd received this issue of HCJ as the premiere issue from a fledgeling publishing company, I would praise their laser printing, their well-designed layout, the innovative inclusion of the companion disk, and their reasonable selection of a quarterly publishing schedule. (I would still balk at the price tag!) But from a publisher who's been "in the business" since early in the decade, producing magazines of size and content far greater than this over-priced newsletter, I expect more!

**CHARACTER LOADER**  
Curtis Alan Provance  
New Hampshire 99er's User Group

Sometimes, I have wanted to reload the standard character patterns after a game has finished, or a title screen has been displayed, etc. The E/A manual gives the two GPLLNK links necessary, but I found they're more trouble than they're worth. For example, if the machine code you are writing is to be run from XBASIC, you must also write your own GPLLNK code. Similarly in E/A option 5; the GPLLNK code doesn't get loaded when you run a memory image file. I wrote this shorty to load the patterns from console GROM:

```
SETGRM
  LI R0,>06B4
  MOVB R0,@>9C02
  SWPB R0
  MOVB R0,@>9C02

SETVDP
  LI R0,>0049
  MOVB R0,@>BC02
  SWPB R0
  MOVB R0,@>BC02

SETREG
  LI R1,95

LOOP1
  MOVB R1,@>BC00
  LI R0,7

LOOP2
  MOVB @>9B00,@>BC00
  DEC R0
  JNE LOOP2
  DEC R1
  JNE LOOP1
```

SETGRM loads the GROM address of the patterns into the GROM WRITE ADDRESS location. SETVDP loads the VDP address of the patterns into the VDP WRITE ADDRESS location.

The VDP address depends on how you have set VDP register #4. The E/A default for this register is >01. Multiplied by >0800, this means that character #0's pattern starts at >0800. The patterns for characters 0->31 take up >0100 bytes. Therefore, we will load the 'space' character at >0900. Because we will be writing to the VDP, we must also set bit #2 of the VDP address. The reason I loaded R0 with >0049 is because you have to load the lower byte first. If we were to reload the characters in the XBASIC environment, we would have loaded R0 with >0044. This is because the pattern table starts at >0000, but there is a >60 offset. This means that if you want to display the letter 'A' (>41) you must really display >41+>60=>A1. The offset of >60 corresponds to >60\*8=>300 bytes. Remember why we need the extra >100? Right, characters 0->31.

We want to load 95 characters, ASCII 32 to 126. Note that we are not loading the cursor (30), edge character (31), or DEL (127). You should also know that the patterns stored in GROM do not contain the first byte, which is always >00. However, by loading R1 with 95 (>005F), we ensure that R1's most significant byte is >00. Let's start loading.

First load a >00 into the pattern (LOOP1). Next we will load seven bytes from GROM, so set up a counter (R0). When those seven bytes are loaded, count down one pattern. Do this 95 times and you're done!

**PLEASE READ THIS!**

Curtis Alan Provance###  
New Hampshire 99er's User Group

I have had my computer almost four years now, and it works very well except for one key. I suppose I shouldn't complain; there are 47 other keys I may use. Besides, what difference can one key make?

After giving it some thought, I realized that the keyboard on my trusty TI is similar to our club. There are numerous members in the club; some are more 'visible' than others. Some members participate to a great extent; some won't participate (or can't) much at all. I certainly understand those individuals who, due to other commitments, can't participate more fully. I also understand those individuals who do not participate because they feel they can't make a difference. Let me assure you! Your participation does make a difference! You could be the one 'key' who would really make this club excel. Perhaps you could review a piece of hardware or software at a meeting? We can always use an article - if it's important to you, it's important to at least half our readers! How about donating a module or book to the club so everyone can use it? These possibilities are not endless, but they certainly are many and diverse.

If there is a moral to this story, let it be that all members are 'keys' members.



**Happy 100th  
Birthday  
Ms. Liberty!!**

**1886  
1986**

TI Console BASIC Games	NHUG CB01
Acrocel	Caloriecop
Beethoven	Makeaface
Graphmatch	Marblejoy
Mozartmach	Suprphase
TI Extended BASIC Games	NHUG CB01
Bridge Guard	Meotar
Shooting Gallery	Hotdog
Krazy Koala	Treasure Island
Teach Yourself BASIC	
Chapter 1 to 5	
Teach Yourself BASIC	
Chapter 6 to 10	
Dicres but Goodies	
3-D Tic-tac-toe	Pegjump
Hammurabi	Word Safari
Hidden Pairs	
JET Public Domain	
Out on a Limb	
Peter Cottontail's Egghunt	
Alphanum Delight	
Console BASIC Sampler	NHUG CB03
Larry's Fiddle	Name that Bone
Tunes	Battle at Sea
Hacksville	Country Fair Derby
Hoedown	Chuci a Luck
Movie Star Quiz	Othello
Simon's Saucer	Lucy Seven
Arrow Zap	Peg Jump
Skeetshoot	Hammurabi
Slot Machine	3D-Tic-Tac-Toe
Towers of Hanoi	Hidden Pairs
Biorhythm Compat.	
Camel	
Fishing	Beethoven
Murder	Mozart Machine
Graphics Package	
Plotting	XTC Plot
Curve Fittings	
E.E.Library	
Filter Design	Root Locus Calcs
Phase Lock Loop Design	Smith Chart Calcs
Graphics Code Generator (DEMO)	NHUG XB02
Capital Capers	Y-BASIC
Cape Cod Golf	BASIC
Typewriter	X-BASIC

# NHUG's User Group Tape Library

Oscar Software Library	BASIC
Amulet	Alphabet House
Balloon Darts	Financial Quiz
Caterpillar Climt	First Aid Quiz
Code Master	Health Assessment
Four in a Row	Internal Rate of Return
Match Up	The Law & You
Math Challenge	Loan Amortization
Pachisi	Miles per Gallon
Room to Move	Net Profit Value
Spelling Tutor	Multiplication Drill
Star Count	Payback Period
States & Capitals	Return on Investment

Teach Yourself BASIC	Extended BASIC Tutor
----------------------	----------------------

Ch.1 Learning BASIC	1. Commands & Editing
Ch.2 More Numbers	2. New Functions & Subprograms
Ch.3 Controlling the Computer	3. Input/Output
Ch.4 Programming	4. Writing Subprograms
Ch.5 More Programming	5. Sprites Part 1
Ch.6 Functions	6. Sprites Part 2
Ch.7 Strings	7. Exception Handling
Ch.8 More Programming	
Ch.9 Data Handling	
Ch.10 Call Statements	

Potpourri 01

Snoopy's Christmas  
Musical Scale  
Biorhythm Compat.  
Strauss  
Clock  
Check balance

Potpourri 02

Char. Definition  
Horse Program  
Up Scope

Potpourri 03

Snoopy Christmas  
Musical Scale  
Music Strauss  
Clock  
Check Balance  
Cars  
Carcas

Potpourri 4 NHUG CB04

Electronic Secretary  
Personal Loan Calculator  
Building Costs Estimator

Typing for Accuracy  
Bargraph Maker  
Health Quiz

Potpourri 5

Guess a Number  
Guess a Letter  
Working w/ Money  
Loader  
Time

Potpourri 6

Microjaws X-B  
Taco Man  
Quintis  
Camelot  
Astromania

**For more  
info, please  
contact:  
Ellen Rule  
746-4017**

# TIPS FROM THE TIGERCUB

#32

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TIGERCUB SOFTWARE  
156 Collingwood Ave.  
Columbus, OH 43213

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Over 130 original programs in Basic and Extended Basic, available on cassette or disk, only \$3.00 each plus \$1.50 per order for PPM. Entertainment, education, programmer's utilities. Descriptive catalog \$1.00, deductible from your first order.

Tips from The Tigercub, a full disk containing the complete contents of this newsletter Nos. 1 through 14, 50 original programs and files, just \$15 postpaid. Tips from the Tigercub Vol. 2, another diskfull, complete contents of Nos. 15 through 24, over 60 files and programs, also just \$15 postpaid. Or, both for \$27 postpaid.

Nuts & Bolts (No. 1), a full disk of 100 Extended Basic utility subprograms in merge format, ready to merge into your own programs. Plus the Tigercub Menuloader, a tutorial on using subprograms, and 5 pages of documentation with an example of the use of each subprogram. All for just \$19.95 postpaid.

Nuts & Bolts No. 2, another full disk of 100 utility subprograms in merge format, all new and fully compatible with the last, and with 10 pages of documentation and examples. Also \$19.95

postpaid, or both Nuts Bolts disks for \$37 postpaid.

Tigercub Full Disk Collections, just \$12 postpaid! Each of these contains either 5 or 6 of my regular \$3 catalog programs, and the remaining disk space has been filled with some of the best public domain programs of the same category. I am NOT selling public domain programs - my own programs on these disks are greatly discounted from their usual price, and the public domain is a FREE bonus!

TIGERCUB'S BEST PROGRAMMING TUTOR  
PROGRAMMER'S UTILITIES  
BRAIN GAMES  
BRAIN TEASERS  
BRAIN BUSTERS!  
MANEUVERING GAMES  
ACTION GAMES  
REFLEX AND CONCENTRATION  
TWO-PLAYER GAMES  
KID'S GAMES  
MORE GAMES  
WORD GAMES  
ELEMENTARY MATH  
MIDDLE/HIGH SCHOOL MATH  
VOCABULARY AND READING  
MUSICAL EDUCATION  
KALEIDOSCOPES AND DISPLAYS

For descriptions of these send a dollar for my catalog!

I've found a bug in the Tigercub Menuloader V.#5 which won't let you print a disk catalog if the disk contains the maximum 127 files. This should fix it.

```
340 I=I+1 : IF I>127 THEN K=X : GOTO 430
520 DISPLAY AT(X+5,12)SIZE(12):" #?" : ACCEPT AT(X+5,15)SIZE(3)VALIDATE(DIGIT):KD : IF KD<1 OR KD>MN THEN 520
```

I think that all program listings should be printed in 28-column format, exactly as they appear on the screen - it makes it so much easier to key them in without errors. I combined parts of two of my programs to make

the following. It is written for the Gemini 10X but the lines of printer control codes are annotated to help others make adjustments.

```
100 DIM K$(240):: LN=100 : DISPLAY AT(3,4)ERASE ALL:"TIGERCUB PROGLISTER": " Will convert a program":listing to 28-column format,"
110 DISPLAY AT(7,1):"exactly as it appears on the":screen, and print it in 4":columns."
120 DISPLAY AT(11,1):" Program must be RESequenced":and LISTed to disk by":RES (enter)":LIST DSK1.(filename) (Enter)"
130 DISPLAY AT(18,1):"Filename? DSK" : ACCEPT AT(18,14) BEEP:F#
140 OPEN #1:"DSK"&F#,DISPLAY ,VARIABLE #0,INPUT
150 IF EOF(1)=1 THEN 260 : LINPUT #1:A#
160 IF LEN(A#)<B# THEN LN=LN+1# : GOTO 210
170 LINPUT #1:B# : IF POS(B#,STR$(LN),1)=1 THEN FLAG=1 : LN=LN+1# : GOTO 210
180 A#&A#&B# : IF LEN(A#)<160 THEN LN=LN+1# : GOTO 210
190 LINPUT #1:C# : IF POS(B#,STR$(LN),1)=1 THEN FLAG=1 : LN=LN+1# : GOTO 210
200 A#&A#&B# : LN=LN+1#
210 S=1
220 L$=SE6$(A#,S,28)
230 IF L$<>" THEN 240 : IF FLAG=1 THEN FLAG=0 : A#&B# : GOTO 160 : ELSE GOTO 150
240 X=X+1 : K$(X)=L$ : S=S+28 : IF X=240 THEN 250 : GOTO 220
250 X=0 : CALL PRINTER(K$(X)) : GOTO 220
260 CLOSE #1 : FOR J=X+1 TO 240 : K$(J)=" : NEXT J : CALL PRINTER(K$(J)) : PRINT #2:CHR$(12) : END
270 SUB PRINTER(B#(1)) : IF F=1 THEN 340 : F=1
280 OPEN #2:"PIO.LF",VARIABLE 132 : PRINT #2:CHR$(15);CHR$(27);"M";CHR$(6);!condensed print and perforation skip
290 PRINT #2:CHR$(27);"6";!
```

```
- double-struck printing, optional
300 PRINT #2:CHR$(27);CHR$(42);CHR$(8);!download normal characters - required if lines 310-330 are used
310 PRINT #2:CHR$(27);CHR$(42);CHR$(1);CHR$(48);CHR$(8);CHR$(64);CHR$(30);CHR$(96);CHR$(17);CHR$(72);CHR$(5);CHR$(66);CHR$(61);CHR$(8);!slash the zero - optional
320 PRINT #2:CHR$(27);CHR$(42);CHR$(1);CHR$(42);CHR$(8);CHR$(8);CHR$(34);CHR$(8);CHR$(8);CHR$(62);CHR$(8);CHR$(8);CHR$(34);CHR$(8);!broaden the asterisk - optional
330 PRINT #2:CHR$(27);CHR$(36);CHR$(1);!activate redefined characters - required if lines 310-320 are used
340 FOR C=1 TO 60 : IF B$(C)="" THEN 360 : PRINT #2:TAB(10);B$(C);TAB(41);B$(C+60);TAB(72);B$(C+120);TAB(103);B$(C+180);CHR$(10)
350 NEXT C
360 SUBEND
```

I had trouble in debugging that program because printing the control codes gave me unwanted line feeds, and using semicolons to prevent line feeds will interfere with tabs in the first line of text. An article by Art Byers in the Central Westchester UG newsletter gave me the solution - suppress all the line feeds by opening the printer with PIO.LF, and put them back in where you need them with CHR\$(10)!

We haven't had a random music player in a long time. This one is called ECHO but I don't know where it came from.

```
100 RANDOMIZE : DEF X=INT(RND*7):: FOR B=0 TO 6 : A(B)=VAL(SE6$("247262294330349392440", (B+1)*3-2,3)) : NEXT B : B,C,D=X
110 CALL SOUND(-900,A(B),B,A(C),9,A(D),19) : D=C : C=B : B=X : GOTO 110
```

```

Sound effects - thanks to
Greg Healy in the Edmonton
User Group newsletter -
100 CALL INIT
110 FOR J=2000 TO 2300 STEP
10 :: CALL LOAD(-31568,J)::
NEXT J

```

To go directly from XBasic to console Basic - thanks to Greg Healy in the Edmonton User Group newsletter -

```

CALL INIT :: CALL LOAD(-3196
2,8787)
Enter. Ignore the error
message. Type NEW and Enter.
> TI BASIC READY

```

This routine will read a file of 28-character records and scroll them up the lower half of the screen without disturbing the upper half.

```

100 DISPLAY AT(12,1)ERASE AL
L:"FILENAME? DSK" :: ACCEPT
AT(12,14)BEEP:IF# :: CALL CLE
AR
111 OPEN #1:"DSK"&F$,INPUT
112 DIM M$(480)
113 X=X+1 :: LINPUT #1:M$(X)
120 DISPLAY AT(24,1):M$(X)
125 R=24
130 FOR T=X-1 TO 1 STEP -1 :
: IF R>13 THEN R=R-1 :: DISP
LAY AT(R,1):M$(T)
140 NEXT T :: IF EOF(1)<>1 T
HEN 113 ELSE CLOSE #1

```

```

10 !ONE-LINE MORTGAGE PAYMEN
T CALCULATOR BY SAM MORABITO
100 CALL CLEAR :: INPUT "ENT
ER P,R,N WHERE P=AMOUNT, R=R
ATE, N=YEARS":P,R,N :: PRINT
"@";INT((P/R/1200)/((1-(1+
R/1200)^(N*12))=100+.5)/100;
"PER MONTH"

```

A number always prints out with a blank space before and after it (except that a negative number is preceded by -). This is not always desirable when formatting a screen or printout. The solution is to change the number to a string by using STR\$ -

```

100 CALL CLEAR
110 PRINT " MULTIPLICATION
TABLES":

```

```

120 FOR J=1 TO 9
130 FOR K=1 TO 9
140 PRINT TAB(K*3-2);BTR$(J*
K);
150 NEXT K
160 PRINT :
170 NEXT J

```

Regarding the CHECKER program in Tips #31, I should have mentioned that the two programs to be compared must first be LISTed to one disk by -

```

LIST "DSK1.(filename)
- using a different file-
name for each.

```

We are still finding new ways to skin the kitty. In Tips #26 I listed three algorithms to alternate between the two joysticks. Rick Humburg sent me another which is the simplest and fastest of all -

```

100 Z=2
110 Z=3-Z :: CALL JOYST(Z,X,
Y).....and back to 110!

```

Here are some more dark secrets Texas Instruments didn't tell us. The User's Reference Guide claims that the computer can produce frequencies up to 44733 Hz, "well above human hearing limits", but then admits "the actual frequency produced may vary from 0 to 10 percent depending on the frequency." According to Jim Hindley, the highest frequency actually produced is 37287 (which is certainly not above the hearing range of some humans, but neither is 44733!), and the maximum error rate far exceeds 10% because any frequency you call for from 31953 to 43733 ends up as exactly 37287! Not to worry, the frequencies in the normal range of music are accurate enough and your TV speaker probably can't reproduce frequencies above 20000 anyway.

And did you know that TI really gave us only 15 vol-

```

umes, not 30? Listen and
count them -
100 FOR V=1 TO 29 STEP 2
110 CALL SOUND(1000,500,V)
120 CALL SOUND(1000,500,V+1)
130 FOR D=1 TO 500
140 NEXT D
150 NEXT V

```

And the duration values are just as inaccurate. Experimenting with a series of 8 CALL SOUNDS in a loop repeated 100 times, I found that execution time was 40 seconds for any duration between 1 and 49, or a negative duration; 54 seconds for any duration between 50 and 66; 67 seconds between 67 and 83; 80 seconds between 84 and 99; 94 between 100-116; 106 between 117-133....!

I guess I've been neglecting those who don't have the Extended Basic module, so -

```

100 CALL SCREEN(16)
110 CALL CLEAR
120 PRINT TAB(8);"GREENSLEEV
EB": : : : : : : : : :
: "programmed by Jim Peterso
n"
130 DIM B(15)
140 FOR M=1 TO 12
150 READ B(M)
160 NEXT M
170 M$="421800995ABDC324E7DB
A5186699182400423A00BDC35A66
A5243C7EB1994200A57E66BD3CA5
423C187E423CBD5A810099FFC3"
180 RANDMIZE
190 FOR R=1 TO 12
200 CALL COLOR(R+1,1,1)
210 CALL CHAR(32+R*B,CH$&CH$)
)
220 FOR T=R TO 25-R
230 CALL HCHAR(T,R,32+R*B,34
-2*R)
240 NEXT T
250 NEXT R
260 CALL SCREEN(2)
270 FOR R=1 TO 12
280 CALL COLOR(R+1,R+2,1)
290 CH$=SEG$(M$,INT(47*RND+1)
)*2-1,0)
300 CALL CHAR(32+R*B,CH$&CH$)
)
310 NEXT R

```

```

320 DATA 247,277,294,311,330
,370,392,440,494,523,554,587
330 DATA 2,5,5,4,7,5,2,8,5,3
,9,5,1,10,1,2,9,3,4,8,3,2,6,
3,3,3,1,1,5,3
340 DATA 2,6,1,4,7,5,3,5,2,1
,4,2,2,5,2,4,6,1,2,4,4,4,1,1
350 DATA 2,5,1,4,7,5,2,8,5,3
,9,5,1,10,5,2,9,5
360 DATA 4,8,3,2,6,3,3,3,3,1
,5,3,2,6,3,3,7,5,1,6,2,2,5,1
370 DATA 3,4,1,1,2,2,2,4,1,4
,5,1,2,1,5,6,5,1
380 DATA 2,12,9,2,12,7,2,12,
3,3,12,12,1,11,9,2,9,7
390 DATA 4,0,6,2,6,3,3,3,3,1
,5,5,2,6,3,4,7,5,2,5,3
400 DATA 3,5,5,1,4,4,2,5,5,4
,6,1,2,4,1,6,1,1
410 DATA 6,12,9,3,9,12,1,11,
8,2,9,7,4,8,6,2,6,3,3,3,3
420 DATA 1,5,3,2,6,2,3,7,5,1
,6,6,2,5,5,3,4,1,1,2,2,4,4
,4,3,1,1,1,5,7,5,1
430 FOR J=1 TO 223 STEP 3
440 READ T,A,B
450 GOSUB 530
460 FOR TT=1 TO T
470 CALL SOUND(-999,8(A),0,8
(B),7)
480 NEXT TT
490 NEXT J
491 FOR V=0 TO 20
492 CALL SOUND(-999,8(A),V,8
(B),V+7)
493 NEXT V
500 CALL SCREEN(INT(14*RND+2)
)
510 RESTORE 330
520 GOTO 270
530 CALL COLOR(A+1,INT(14*RND
D+2),1)
540 CALL COLOR(B+1,INT(14*RND
D+2),1)
550 RETURN

```

```

1 !from 9 T 9 U6 news1. Aug
85
100 PRINT ""Hello" said TI
"
110 PRINT "Press ""ENTER"" t
o continue"

```

If you bite the hand that feeds you, you'll go hungry tomorrow. Don't be a pirate!

MEMORY FULL TO BUSTIN'

Jim Peterson



Step-by-Step Procedure for replacing  
the GROM Extension Assembly Unit

ALLAN D. GARDNER  
New Hampshire 99'ers User Group

If cleaning the contacts on the cartridges does not cure your TI lockup problem, try replacing the GROM Extension Assembly Unit which is part #1049693-1 (\$5.84 each + \$3.00 S/H) available from:

TI Dealer Parts  
POB 53  
Lubbock, TX 79408

This is how I disassembled my console (circa 1981):

1. Remove the on/off slide knob by pulling straight out.
2. Turn the console over to remove the bottom cover which is held by seven phillips screws.
3. Now comes the "fun" part... first, remember that a computer's worst enemy is static electricity. Try to keep one hand touching the large metal shield at all times, this will prevent static buildup between you and the computer's boards. Remove three small phillips screws (NOT the three larger ones) from the main board, the large shielded board towards the back. This is the board with the side expansion port, joystick port, audio/video output port and cassette port. Move the power jack (has red, white, and black wires connected to it) out of the way of the main board. Carefully lift the main board out and unplug the keyboard (ribbon cable). Turn main board over ... the GROM Port Extension will be on top (it may have been pulled off when removing main board). Simply unplug the GPE unit and plug in the new one!

As Ellen Rule stated about cartridges in the April '86 Newsletter, check the metal connector foils on the new unit to make sure they are clean. An ordinary clean pencil eraser works fine, also, if you have any tuner cleaner or contact cleaner around, it wouldn't hurt to spray a little on the contacts before installation.

Now is a good time to clean out any dust (or cat hairs!?) that may have built-up inside the console and to check for loose connections.

Re-Assembly

Plug keyboard back into main board. Carefully place the main board into the console cabinet (be

sure that the brown power supply wires are out of the way) and secure with the three small phillips screws. Put the power jack back in place at the rear of the console. Secure the bottom cover in place with the seven phillips screws. Snap the on/off switch in place and check operation. If switch does not operate correctly, pull the switch off, remove the bottom cover again and make sure the switch on the power supply board is seated in the plastic extension piece.

That wasn't very hard, was it? This also shows how well the TI is built compared to other computers that are priced much higher.

I have repaired a few consoles and most of the problems were minor, cold solder joints, loose connections, etc. One console was tough... it would lock up randomly. Sometimes when first turned on, other times it would run for 15-20 minutes before hanging up. The screen would go blank and a random noise would be generated. It turned out to be a bad connection in one of the internal GROM I.C. sockets, a jumper had to be soldered right to the I.C. pin.

If anyone has a problem with the electronics of the TI that you can't solve, feel free to write me: Allan D. Gardner - POB 454 - Mapleville, RI 02839 (401/568-6831).



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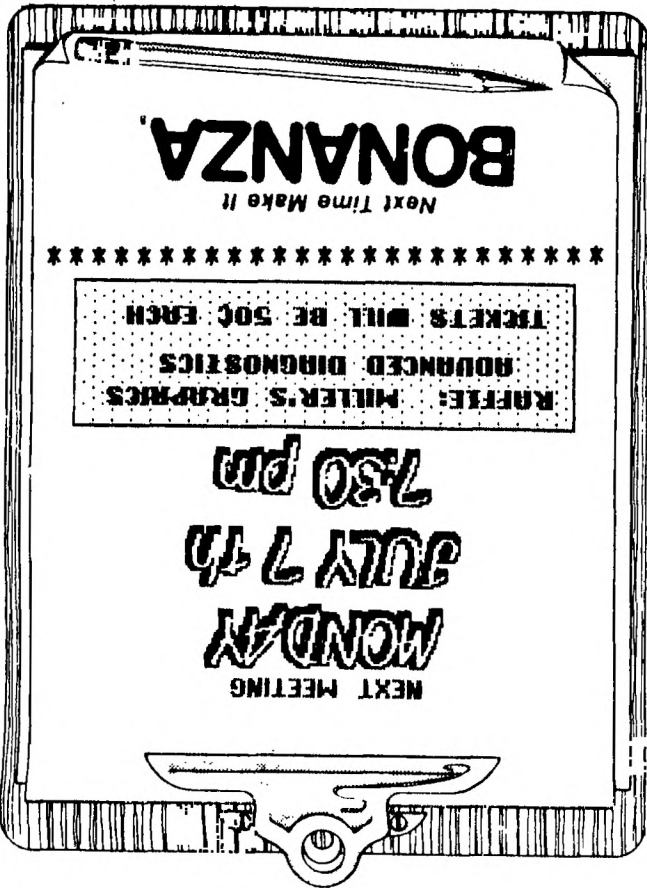
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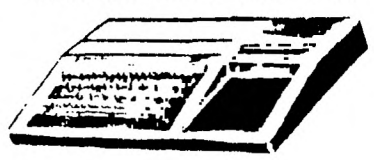
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