



Atlanta  
99/4A  
Computer  
Users  
Group

# CALL NEWSLETTER

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Atlanta, Georgia

## WATCHDOG VS JUST LOUD BARKING

A watchdog protects your interests. If the dog is just one that barks loudly then all it does is annoy the neighbors. The problem with being a Watchdog is that it can be hard for others to tell if you are being a valiant crusader looking out for the well being of others or just giving vent to personal peeves. Of course the opposite can happen. Having regular access to a publication and not bringing to light questionable practices, you are or should be just as open to criticism.

Being aware of the risks. Here goes.

The NATIONAL ASSISTANCE GROUP in Florida has the scales tipped against it. For a \$10 membership you get the privilege of calling their number for technical advice and software support. Its greatest purpose seems instead to be just another company selling programs and equipment. Quite a furor has developed in the TI Community about its advertising a TURBO PASCAL for the TI. Since no product exists or is even under development (according to Borland the company that owns the copyright on TURBO PASCAL), having such a program for the TI seems like a neat trick. Computer Shopper no longer carries their advertising because of complaints from its readership, I'm told. I've also been told that the super duper copy program they provide is really Steven Lawless's Masscopy version 1. Would appreciate feedback on this.

Anybody heard about the former International User's Group lately? A reliable source informs me that Charles LaFara has only recently declared business bankruptcy although the many 'Dear Friend' letters he sent out months ago stated he was doing it then. He still at last report has not declared personal bankruptcy which I was informed that the court had ordered him to do. That would appear in contempt of the court order. Do you know that he first listed the IUG as having NO ASSETS. Along similar lines: We received a flyer from Jerry Tullis Auctioneering advertising the selling off of equipment belonging to the IUG. The brochure does not include any mention of the 'Public Domain Library'. By the way, LaFara is reportedly still selling programs in Oklahoma under the name of "Christian Software".

There is a controversy between Databiotics and the author of BitMac. We heard about it when the author contacted us, and many other groups around the country. David Vaughn of Vaughn Software informed our group that he was going to market BitMac himself after having withdrawn from the arrangement he had with a distributor. As the story goes, the distributor continued to sell the program; hence the controversy. A more complete accounting can be found in the September 85 issue of Micropendium.

Databiotics, Tex Comp, Mini-Mag 99, and

Jerry Price can all essentially be described as different names for the same group. I have been told from completely different sources that Tex Comp has been selling non-licensed copies of the Scott Adams Adventures and other software. I would appreciate verification or denials of this if possible.

Other concerns at large:

The Don Vieth, who produces the National 99'er in Bakersfield, California has been criticized as getting too close to a supplier of hardware that he reviews, to the extent of it coloring the result of what he writes. The criticism continues with the fear/feeling that he is more interested in building a little kingdom (a la LaFara) than he is in organizing, coordinating, and disseminating information between the country's Users' Groups and its members. Those last dozen words were the reason why his organization formed as I understand it. I note the criticism but I'm still pulling for Don Veith and company to make a go of it. My reason for sticking on the positive side is that this is not a business but basically a one man operation. So, at this point I hope the criticism is just overblown.

Micropendium has for almost two years now been fulfilling the need of 99/4A users as the only DEPENDABLE and fair minded monthly publication in existence. It has done more than striving to exist; it has expanded its size and coverage.

I have heard some comments lately that deserve repeating. Some are opinions that I'm repeating and don't agree with, others are concerns that I feel need to be mentioned if only to generate feedback to see what others think.

Point 1: The advertisements.

I know it is impossible to check out the validity of all claims, hardware, and companies. Still... There seem to be a couple of ads that should not have been included. Again we have the National Assistance Group. There is an ad for an IQ Card; \$9.95 for a piece of cardboard cut out after tracing the picture of a diskette. You use this to help make flippies of floppy diskettes.

There is another issue relating to advertisements that may not be valid but it is still drawing criticism. The view is that the more dependent you get on advertising revenue the less likely you are to give bad reviews on hardware or software on which you carry advertising.

There are so many advertisements by Tex Comp that it looks like Micropendium is a subsidiary of Tex Comp. I really enjoy the ads in Micropendium and I also realize that its survival depends on ad revenue as well as the paid subscriptions, however I can't help but point out that there is too much Tex Comp.

Gary Matthews

## FREEMARE AND PUBLIC DOMAIN AVAILABLE

Following is a list of known software available that is either Freeware or Public Domain. To obtain the programs that the club already has available, the policy is as follows:

- Ready made diskettes (flippies) for many of these programs are available at the meetings for \$3 apiece (members) \$4 (non-members). Pay only a \$1 instead as service charge if you bring a disk to swap for each disk of programs. To know which diskettes are available or to request that certain programs be at the meetings call the club's information # 231-0992.
- Members and non-members can send a disk mailer with return address, postage, and sufficient disks to the club address for these programs. The club is not responsible for people sending insufficient return postage or an insufficient number of disks to hold the programs. For people who go to this trouble; there is no charge of any kind.
- The Atlanta 99/4A Computer Users Group charges these fees because we cannot afford to do it for free. The club does not do this to make a profit. We fully expect and sincerely hope that people receiving these programs will send the small price that the authors ask for their work.
- When you write to the addresses listed for the author and their programs, send them a return postage disk mailer and enough diskettes to hold their programs; PLEASE REMEMBER... the price they ask is not meant to include their sending you disks and mailers.
- You get the most recent version when getting the program from the author instead of a club.

These are the programs (Fits on 1 SS disk unless stated otherwise) that the club already has:

TK-WRITER/TK-LOADER, DISKO, MASSCOPY, COMM 99, GOTHIC PRINT - All fit on 1 SS disk  
 HUGGER's EXT BASIC FORTH - Only works on a 'pure' TI system (no 3rd party cards)  
 FORTH SOURCE CODE - 2 SS disks  
 JET PUBLIC DOMAIN - 2 SS disks, Educ. & Games  
 SCREENDUMP  
 TI ADVANCED ASSEMBLY DEBUGGER  
 DISK MANAGER 1000  
 TE3C  
 TAX FORMS (1984) Dick Scott, uses Multiplan  
 BILL KNECHT's BEST HYMNS  
 FORTH MANUAL on disk - 4 DS disks  
 TI-WRITER & MULTIPLAN Enhancements  
 FAST TERM  
 MUSIC SAMPLER  
 FRED GUYTON'S MAIL LIST & CHECKBOOK PROGRAMS  
 BILL KNECHT's BEST SONGS  
 TI-WRITER Rewritten Manual-Dick Altman, DS disk  
 Jim Hubbard - 2 very good program demonstrations (1 per disk) to use on the 99/4A at meetings.

## LISTING OF FREEMARE PROGRAMS AND AUTHORS:

SPRITE BUILDER-\$7.50 & JET PUBLIC DOMAIN  
 John Taylor 2170 Estaline Dr., Florence, AL 35630. Fancy Sprite creation & manipulation.  
 CHECKBOOK & BUDGET PROGRAM-\$10? New program by John Taylor, holds 120 transactions a month fast XB access time.

ASSAULT THE CITY-\$5 John Benke 5755 W. Grace, Chicago, IL 60634. Uses Tunnels of Doom Module

MASSCOPY-\$10 Steve Lawless 2514 Maple Ave., Wilmington, DE 19808. Can make 2 copies

TRIVIA 99'ER-\$5 Robert L. Wessler 4300 Frazier, Fortworth, TX 76115. XB game

THE DIRECTOR-\$5 Ron Rutledge 1020 3rd St., Waukeg, IA 50263. XB catalogs program disks

MASTER CATALOG-\$10 Mack McCormack 215A Yorktown Dr., Ft. Lee, VA 23801. Ass'bly, holds 2000 files

TK-WRITER-\$7.50 & SUPER DISK DUPLICATOR-\$10 Tom Knight 7266 Bunion Dr., Jacksonville, FL 32222. Uses XB or E/A cartridge.

SCREEN DUMP-\$10 & NEAT LIST-\$10 Danny Michael Rt. 9 Box 460, Florence, AL 35630.

SUPERBUG II-\$5 Edgar L. Dohmann Route 5 Box 84, Alvin, TX 77511. Much improved from TI version.

XBASIC FORTH-2 SS disks Rene LeBlanc 8719 E. San Lucas Dr., Scottsdale, AR 85258.

PRO 99ER BBS-Ask about # disks & price. Mark Hoogendoorne 21 Long St. Burlington, MA 01803 Supports 1200 baud & true TE2 downloads.

DISK MANAGER-\$? Todd Kaplan 5802 N. Wester #3S, Chicago, IL 60659. Good DM2 on disk.

EASVSPRITE-\$? Tom Freeman 515 Alma Real Drive, Pacific Palisades, CA 90272. Create & save sprites, has assembly routines.

PILOT 99-\$10 Thomas Weithofer 1000 Harbury Dr. Cincinnati, OH 45220. An entire but simple language for the TI.

FAST TERM-\$10 Paul Charlton 1110 Pinehurst, Ct., Charlottesville, VA 22901. True TE2 Xfers

C COMPILER-\$20 Clint Pulley 38 Townsend Ave, Burlington, Ontario, CANADA L7T 1Y6  
 SUPER COPY-\$10 Clint Pulley- disk copier  
 9900 BREAKTHRU-\$10 Clint Pulley- FORTH game  
 He cannot use US stamps, send \$1 postage.

WEATHER FORCASTER-\$5 Gary Cox 3174 Melbourne, Memphis, TN 38127. XBasic

X-DISASM-\$10 Fred Hawkins 1020 N. 6th St., Allentown, PA 18102. Powerful, payers get doc.

DIASSEMBLER-\$10 Mart Kroll 218 Kaplan Ave., Pittsburg, PA 15227. Assembly & full featured.

DISK MANAGER 1000-\$5 Bruce Caron/Ottawa U.G. P.O. Box 2144 Station 'D' Ottawa, ONT. K1P 5W3 Replaces and is better than the DiskManag.2

BEST SONGS & BEST HYMNS-\$6 2 disks Bill Knecht 815 Yorkshire, Pasadena, TX 77503.

FILEREADER-\$2 Martin A. Smoley 6149 Bryson Dr. Mentor, OH 44060. Reads & prints I/F etc. files

FAST FORTH-\$10 Tim Curran 4153 Four Pole Rd., Huntington, WV 25701. XBasic, fast editor, etc.

TECHIE BBS-Takes 4 SS disks. No price listed. Monty Schmidt 525 Wingra St., Madison, WI 53714. 300 baud, plans 1200 & download capability  
 COMPACTOR-No price listed, Monty Schmidt  
 UNCOMPACTOR-No price, Monty Schmidt. Compacts or uncompact a D/F80 file - faster load times.

SOUND DIGITIZER-\$20 99 Assembly Software, PO Box 639, Lucasville, OH 45648. Digitizes sound, comes on cassette, Users Groups can make copies.

\* \* Topics - LA 99ers \* \*

**YORZWR** \* \* \* \* \*  
**IDS** \* Do you want your children to learn to play the piano, but can't afford one right now? Here is an inexpensive substitute: the TI-99/4A piano.

You play only the bottom three rows, essentially all of the letter keys. You can play them with the shift key up or down. In one case you play whole notes, in the other one you play half notes, which repeat when you hold down the key.

The very bottom row plays noise tones when the shift key is locked down, very amusing to little children.

To keep the program simple, the screen is left blank. But that does not impede all you budding programmers to create some nice graphics to enliven this music program, and make it even more attractive to children.

This program was published in Mittinian, the Swedish newsletter for 99-ers, by an unknown author. The translation was done by Maurice E.T. Swinnen of the Washington DC Area 99-er Computer Club.

```

50 REM PIANO, MITTINIAN 84-2
100 CALL KEY(0,K,S):: IF S=0 THEN 100
110 IF K=45 THEN 100
120 IF K<44 THEN 100 ELSE IF K>46 AND K<
58 THEN 100 ELSE IF K>60 AND K<65 THEN 1
00
130 IF K>90 AND K<96 THEN 100 ELSE IF K>
96 THEN 200 !CHECK IF LOWER OR UPPER CAS
E LETTER HAS BEEN PRESSED
140 IF K=44 THEN CALL SOUND(-100,1560,0)
:: GOTO 100
150 IF K=46 THEN CALL SOUND(-100,1760,0)
:: GOTO 100
160 IF K=59 THEN CALL SOUND(-100,690,0):
: GOTO 100
170 IF K=58 THEN CALL SOUND(-100,1661,0)
:: GOTO 100
180 IF K=60 THEN CALL SOUND(-120,-8,0)::
GOTO 100
185 REM UPPER CASE LETTERS ASCII=65->90
190 ON K-64 GOTO 210,220,230,240,250,260
,270,280,290,300,310,320,330,340,350,360
,370,380,390,400,410,420,430,440,450,460
195 REM LOWER CASE LETTERS ASCII=97->122
200 ON K-96 GOTO 470,480,490,500,510,520
,530,540,550,560,570,580,590,600,610,620
,630,640,650,660,670,680,690,700,710,720
205 REM UPPER CASE LETTERS=HALF TONES+NO
ISE
210 CALL SOUND(-120,460,0):: GOTO 100
220 CALL SOUND(-120,-6,0):: GOTO 100
230 CALL SOUND(-120,-1,0):: GOTO 100
240 CALL SOUND(-120,622,0):: GOTO 100
250 CALL SOUND(-120,156,0):: GOTO 100
260 CALL SOUND(-120,740,0):: GOTO 100
270 CALL SOUND(-120,831,0):: GOTO 100
280 CALL SOUND(-120,932,0):: GOTO 100
290 CALL SOUND(-120,311,0):: GOTO 100
300 CALL SOUND(-120,1109,0):: GOTO 100
310 CALL SOUND(-120,1245,0):: GOTO 100
320 CALL SOUND(-120,1480,0):: GOTO 100
330 CALL SOUND(-120,-4,0):: GOTO 100
340 CALL SOUND(-120,-5,0):: GOTO 100
350 CALL SOUND(-120,370,0):: GOTO 100
360 CALL SOUND(-120,415,0):: GOTO 100
370 CALL SOUND(-120,177,0):: GOTO 100
380 CALL SOUND(-120,185,0):: GOTO 100
390 CALL SOUND(-120,554,0):: GOTO 100
400 CALL SOUND(-120,200,0):: GOTO 100
410 CALL SOUND(-120,277,0):: GOTO 100
420 CALL SOUND(-120,-7,0):: GOTO 100
430 CALL SOUND(-120,139,0):: GOTO 100
440 CALL SOUND(-120,-2,0):: GOTO 100
450 CALL SOUND(-120,233,0):: GOTO 100
460 CALL SOUND(-120,-3,0):: GOTO 100
465 REM LOWER CASE LETTERS=WHOLE TONES
470 CALL SOUND(-100,294,0):: GOTO 100
480 CALL SOUND(-100,1175,0):: GOTO 100
490 CALL SOUND(-100,980,0):: GOTO 100
500 CALL SOUND(-100,349,0):: GOTO 100
510 CALL SOUND(-100,131,0):: GOTO 100
520 CALL SOUND(-100,392,0):: GOTO 100
530 CALL SOUND(-100,440,0):: GOTO 100
540 CALL SOUND(-100,494,0):: GOTO 100
550 CALL SOUND(-100,220,0):: GOTO 100
560 CALL SOUND(-100,523,0):: GOTO 100
570 CALL SOUND(-100,587,0):: GOTO 100
580 CALL SOUND(-100,659,0):: GOTO 100
590 CALL SOUND(-100,1397,0):: GOTO 100
600 CALL SOUND(-100,1319,0):: GOTO 100
610 CALL SOUND(-100,247,0):: GOTO 100
620 CALL SOUND(-100,262,0):: GOTO 100
630 CALL SOUND(-100,110,0):: GOTO 100
640 CALL SOUND(-100,147,0):: GOTO 100
650 CALL SOUND(-100,330,0):: GOTO 100
660 CALL SOUND(-100,105,0):: GOTO 100
670 CALL SOUND(-100,196,0):: GOTO 100
680 CALL SOUND(-100,1047,0):: GOTO 100
690 CALL SOUND(-100,123,0):: GOTO 100
700 CALL SOUND(-100,880,0):: GOTO 100
710 CALL SOUND(-100,175,0):: GOTO 100
720 CALL SOUND(-100,784,0):: GOTO 100

```

A REVIEW  
=====MYARC DOUBLE DENSITY CONTROLLER CARD WITH  
DISK MANAGER SUPREME AND MYARC 512K RAMDISK

I would like to take this opportunity to review what I feel to be the best peripherals offered to date for the TI 99/4A. Since I presently own 2 complete expanded Texas Instruments 99/4A systems and have had the opportunity in the past to work with the CorComp Micro Expansion System, I feel that I can properly review the new MYARC peripheral expansion cards and render a fair and impartial evaluation of the performance and features offered.

I begin with the MYARC Disk Controller card, the heart of any good system. The card itself is enclosed in an injection mold duplicate of the original Texas Instruments peripheral expansion cards. It will replace the original TI Disk Controller card, so a physical swap must be made, but not before reading the instruction manual. The instructions indicate that a set of DIP switches inside the MYARC Controller Card will allow the user to custom fit the step time for any of four disk drives. My system has 2 Matsushita disk drives capable of 6ms timing, so the proper setting was made and the card installed in the P-Box.

My controller card came with a TI Disk Manager II cartridge, which was the same one I had been using all along. But wait! One exception is now I can respond to the question "SINGLE DENSITY?" with a resounding N! I can now format my disks to 1280 sectors instead of the Texas Instruments standard 360 or 720 for double sided drives. In addition, new commands are offered in Basic that greatly enhance the Disk Operating System. The most exotic of these is CALL DIR (x) which allows the user to catalog any of 4 drives without overwriting existing memory! This command can be accessed in a Basic program or at command level. I have found this feature alone to be worth the price of a MYARC Double Density Controller Card!!

While I was busy evaluating my new system, I received my copy of "MYARC DISK MANAGER LEVEL III". The Disk is entitled "DISK MANAGER SUPREME" and is formatted to Single Sided, Single Density to allow a fast backup to be made. After making a backup I couldn't wait to load and run it, so, following the instructions in the manual, I typed in CALL ILR, CALL LR("DSK1.DM"). Then almost instantly the MYARC title screen appeared. I pressed a key and presto! the next screen was there. Most commands functioned with just a single key stroke which made this a very enjoyable program to run and a lot more functional than most. Every command one can imagine is waiting for your key stroke including a command which is simply fantastic! A SEE command allows the user to bring up DIS/FIX or DIS/VAR files from any drive and scroll them across the screen for review. Now I can call up my TI Writer files and decide if they should be deleted or kept for future reference. This is a very powerful feature to say the least and one I have never seen before in a Disk Manager. A LOAD AND RUN feature allows the user to load and run assembly files including FORTH, all from Basic. This eliminates a lot of cartridge swapping at which all TI owners have become expert.

The FORMAT feature of the UTILITY screen allows me to format disks in five different configurations using 3 formats and 30 interlace options. To make it easy for the inexperienced user, all of the defaults are set to the recommended formats and interlace specs as outlined by TI and the chip manufacturer. After playing around with different format and interlace options for a while, I found that I could now format 1440 Sectors almost as fast as 360 Sectors the day before! NEAT? YOU BET!

That brings me now to the last part of my review, the RAMDISK. I purchased the 128K model and am going to upgrade to 512K very soon. The Disk Manager Supreme has a separate screen that allows the user to set up the RAMDISK to emulate any of 5 drives. The default is set to DSK5 but is very easy to change to any number drive. I temporarily changed mine to DSK1 and saved several of my favorite programs on the RAMDISK, just to see how fast this new peripheral was. UNBELIEVEABLE! Several of my programs loaded so fast I hardly had time to release the ENTER key than the program was up and running. With the transformer power pack plugged in, the programs on the RAMDISK will remain, ready for use, even with the entire system shut down, so that my favorite programs are always ready to load and run. The print spooler partitioning even allows me to play with my computer while I am printing an entire file on my printer!

While I was writing this review, the 512K upgrade kit arrived, so I quickly installed the required chips and loaded the Disk Manager Supreme. Guess what? The RAMDISK screen had automatically defaulted to 400K and set the spooler to 80K! That my friends, calculates out to 1600 sectors of RAMDISK with 32K still available for memory expansion and 80K for the spooler operation! The RAMDISK cannot be partitioned higher than 400K since the TI Operating System is limited to 400K. Still, the 1600 sectors available are more than a Double Sided Double Density disk can hold, so the user can save the Disk Manager Supreme, several favorite Utility

programs and a full disk of assembly programs and load and run all of them without a single cartridge! All this and still have the capability of printing files on the printer without losing the programs from the RAMDISK.

This combination of RAMDISK with Print Spooler and the DOUBLE DENSITY DISK CONTROLLER with Disk Manager Supreme makes the TI 99/4A an entirely new machine with new capabilities that I and, hopefully, you will joyfully explore in the weeks to come. I heartily endorse and strongly recommend the purchase of the MYARC RAMDISK AND THE MYARC DOUBLE DENSITY DISK CONTROLLER as a valuable upgrade for the TI 99/4A.

As a final note, the review of the RAMDISK in last month's newsletter mentioned problems with several programs not running properly. I had the TI controller and the MYARC controller try the same programs and ALL programs loaded and ran perfectly! I think Gary Mathews has a CorComp disk controller card and the MYARC RAMDISK. I'm sure that the CorComp disk controller caused the problems experienced by Gary and NOT the RAMDISK memory expansion card as was reported.

GUNTER H. HIRSCHLER  
8/31/1985

In last May's Newsletter we published an article about changing the color of the screen when using TEII. At the time I was not aware that this was only a part of a more comprehensive article by Terry Atkinson of the Southern California Computer Group. Rick Cosmano, the VP of SCCG was kind enough to forward to us a copy of Mr. Atkinson's complete article. So without further delay here it is...

#### SCREEN COLOR CHANGES - TI-WRITER - BASIC - TEII

COLORS are represented as follows:

CHARACTER	ASCII	COLOR	CHARACTER	ASCII	COLOR
(SPACE)	32	transparent	(	40	medium red
!	33	black	)	41	light red
"	34	medium green	*	42	dark yellow
*	35	light green	+	43	light yellow
\$	36	dark blue	,	44	dark green
%	37	light blue	-	45	magenta
/	38	dark red	.	46	grey
,	39	cyan	/	47	white

USING THE TEII: To change the characters to white and background to blue  
PRESS CHAR ASCII USE

CTRL .	ESC	27	EXITS NORMAL MODE OF TEII
G	G	71	PART OF COLOR SEQUENCE
FCTN V	DEL	127	" " " "
CTRL .	ESC	27	
(	(	40	
+	+	43	
/	/	47	CHARACTER COLOR.(SEE ABOVE)
\$	\$	36	BACKGROUND COLOR.(SEE ABOVE)
CTRL .	ESC	27	
)	)	41	END OF SEQUENCE

You now should have white letters on blue background. Experiment with other colors substituted for the /\$ above, but be warned not to use transparent for your character colors.

USING BASIC is fairly easy, with a little planning. Merely lay out your codes as I have done above. Then make a string variable containing the codes such as:

```

100 A*=CHR$(27)&CHR$(71)&CHR$(127)&CHR$(27)&CHR$(40)&CHR$(43)&CHR$(47)&
&CHR$(36)&CHR$(27)&CHR$(41)
110 OPEN #1:"RS232/1",OUTPUT
120 PRINT #1:A*
130 CLOSE #1
140 END

```

USING THE TI-WRITER (knowledge of text uploading formats required)  
 Once you have typed in your message to be automatically uploaded to the SOURCE or other system, go to line one and insert the above sequence except that, in the TI-WRITER, the ESC character is accessed by typing a CTRL U FCTN R CTRL U, so, for every ESC encountered, you must substitute these commands. For example, as above example shows, this is what must be typed in TI-WRITER  
 CTRL U, FCTN R, CTRL U, G, FCTN V, CTRL U, FCTN R, CTRL U, (, +, /, \$, CTRL U, FCTN R, CTRL U, )  
 DO NOT TYPE IN THE COMMAS, I merely put them there as separators  
 This line must also be preceded by the character I, which tells the TEII to treat the line as text.

Terry Atkinson.

## REMOTE CONTROL DISPLAY

As I began preparing for a music demonstration at an Atlanta User's Group meeting I began to think of ways I could use the computer itself to help me present my program. The display features of the TI99 would make it very easy to present several lines of information, stop for discussion, then change any of the lines or clear the screen and present new information. Graphics, sounds, and color changes could also be used to emphasize certain parts. I could also use programs from the club library to show how different programs are written and their effectiveness.

I started out using a simple "Press any key to continue" routine, and wrote my demonstration program to pause after each segment. This worked well, but it restricted me to the keyboard, so I created a "Magic Button", a simple pushbutton switch connected to the Joystick port which provided me with room to move around. I could point to the display, move toward the group for discussion, and then change the display or execute an instruction with the press of the "Magic Button." The button is electrically the same as the FIRE button of Joystick#1, and is read by CALL KEY(1,K,S).

My demonstration went something like this, with a pause after each segment:

- A. WELCOME
- B. Display Call Sound with 1 note
- C. Play one note
- D. Display Call Sound with 2 notes
- E. Play two note chord
- F. Display Call Sound with three notes
- G. Play three note chord
- H. Play a song using only Call Sound statements.

This simple programmed demonstration was very straight-forward, but when I used a "RUN DSK!.NEXTPROG" statement I was in for big trouble, or perhaps I should say a real challenge.

I ran "PUPPYTOWN" and then transferred control to the program "PIANO". I suddenly found myself with a screen full of puppies running across the piano. After much research I found that a RUN command resets all variables to zero and resets all special characters and sprites, but a RUN DSK!. does not reset everything. I found it necessary to add some or all of the following instructions to the beginning of a program to be called: (1) CALL CLEAR, (2) CALL CHARSET, (3) CALL DELSPRITE(ALL), and (4) CALL MAGNIFY(1). Note that the CALL CHARSET only resets characters 32 through 95, so the lower case letters will remain redefined.

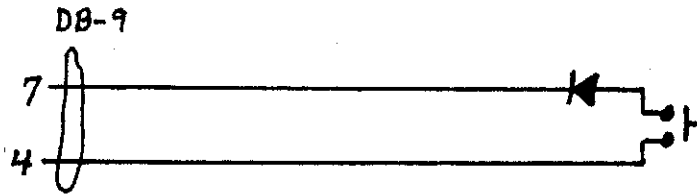
I wrote a subroutine "HOLD"(XBasic) to insert at end of each called program I used. Then I could insert the instruction "CALL HOLD" anywhere in the program to pause and discuss what was happening, or about to happen. The subroutine listed below will recognize any key on the keyboard or the "Magic Button"(FIRE Button #1), and contains a latch so that once the button is pressed, the program will not continue until it is released. This prevents accidentally skipping short segments of program by holding the button too long.

```

30000 SUB HOLD
30010 CALL KEY(5,K,S)
30020 IF S=0 THEN 30050
30030 CALL KEY(5,K,S)
30040 IF S=0 THEN 30090 ELSE 30030
30050 CALL KEY(1,K,S)
30060 IF S=0 THEN 30010
30070 CALL KEY(1,K,S)
30080 IF S<>0 THEN 30070
30090 SUBEND

```

The construction of the Magic Button was done with parts from a local "surplus" store. The button itself was an 8 pole double throw momentary contact switch with 7 poles cut off. The long base of the switch made an excellent handle. Almost any switch will do, and the remote switch on a cassette microphone will do very nicely. The diode is a general purpose low power type (1N914, 1N4001, etc.) The DB9 plug is somewhat more difficult to find, but if you have a broken Joystick you can use the plug from it. I used a 14 foot silver telephone cord because it is small and flexible. This is how the button is wired.



I have enjoyed developing this technique for using the TI99, and learning more about it. I hope others will continue to improve this and find other uses for our "little 99". Together we'll show Lubbock that while we may be orphans, we ain't giving up yet!

Jim Hubbard, 9ACUG

## CONTROLLING YOUR PRINTER

### TI-WRITER PRINTER CODES

TRANSLITERATE CODE	FUNCTION	SPECIAL CHARACTER MODE					
0	Terminate Tabulation	CTRL	U	SHIFT	GN	CTRL	U
7	Sound the buzzer	CTRL	U	SHIFT	GN	CTRL	U
8	Backspace	CTRL	U	SHIFT	GN	CTRL	U
9	Horizontal Tabulation	CTRL	U	SHIFT	GN	CTRL	U
10	Line Feed	CTRL	U	SHIFT	GN	CTRL	U
11	Vertical Tabulation	CTRL	U	SHIFT	GN	CTRL	U
12	Form Feed	CTRL	U	SHIFT	GN	CTRL	U
13	Carriage Return	CTRL	U	SHIFT	GN	CTRL	U
14	Print Enlarged Characters	CTRL	U	SHIFT	GN	CTRL	U
15	Print Condensed Characters	CTRL	U	SHIFT	GN	CTRL	U
16	Select Printer	CTRL	U	SHIFT	GN	CTRL	U
17	Turn OFF Condensed Printing	CTRL	U	SHIFT	GN	CTRL	U
18	Disable Printer	CTRL	U	SHIFT	GN	CTRL	U
19	Turn OFF Enlarged Printing	CTRL	U	SHIFT	GN	CTRL	U
20	Escape	CTRL	U	SHIFT	GN	CTRL	U
27	Set Line Spacing To 8 Per Inch	CTRL	U	FCTN	RR	CTRL	U
27:48	Set Line Spacing To 7/72 Per Inch	CTRL	U	FCTN	RR	CTRL	U
27:49	Set Line Spacing To 6 Per Inch (Normal)	CTRL	U	FCTN	RR	CTRL	U
27:50	Set Line Spacing to n/216 Per Inch	CTRL	U	FCTN	RR	CTRL	U
27:51	Turn Italic Character Set ON	CTRL	U	FCTN	RR	CTRL	U
27:52	Turn Italic Character Set OFF	CTRL	U	FCTN	RR	CTRL	U
27:53	Disable Paper-End Detector	CTRL	U	FCTN	RR	CTRL	U
27:54	Select Paper-End Detector	CTRL	U	FCTN	RR	CTRL	U
27:55	Set Line Spacing To n/72 Per Inch	CTRL	U	FCTN	RR	CTRL	U
27:56	Set Up 8 Vertical Tab Settings	CTRL	U	FCTN	RR	CTRL	U
27:57	Set Form Length n To 127 Lines	CTRL	U	FCTN	RR	CTRL	U
27:58	Set Up To 12 Horizontal Tab Settings	CTRL	U	FCTN	RR	CTRL	U
27:59	Turn ON Emphasized Printing	CTRL	U	FCTN	RR	CTRL	U
27:70	Turn OFF Emphasized Printing	CTRL	U	FCTN	RR	CTRL	U
27:71	Turn ON Double-Strike Printing	CTRL	U	FCTN	RR	CTRL	U
27:72	Turn OFF Double-Strike Printing	CTRL	U	FCTN	RR	CTRL	U
27:73	Turn On Single Density Graphic Printing	CTRL	U	FCTN	RR	CTRL	U
27:74	Turn On Dbl. Density Graphic Printing	CTRL	U	FCTN	RR	CTRL	U
27:75	Turn Elite Mode ON	CTRL	U	FCTN	RR	CTRL	U
27:76	Set Skip-Over Perforation	CTRL	U	FCTN	RR	CTRL	U
27:77	Release Skip-Over Perforation	CTRL	U	FCTN	RR	CTRL	U
27:78	Turn Elite Mode OFF	CTRL	U	FCTN	RR	CTRL	U
27:79	Set Right Margin at n	CTRL	U	FCTN	RR	CTRL	U
27:80	Select n of 8 International Char sets	CTRL	U	FCTN	RR	CTRL	U
27:81		CTRL	U	FCTN	RR	CTRL	U
27:82		CTRL	U	FCTN	RR	CTRL	U

Your TI-WRITER word processor has two ways of outputting codes to your printer. The above codes work for EPSON compatible printers. The following is a explanation of how to use these codes.

## TRANSLITERATE CODES:

These codes can only be used when you print your file through the FORMATTER of TI-WRITER. The main purpose of these codes are if you want to have specific print changes within your text. For example, if I wanted to have a line of text to be printed in ITALICS. I would do the following: On a separate line I would enter .TL 94;27;52 The 94 is the ASCII code for the circumflex symbol (SHIFT 6). This tells the FORMATTER that whenever it runs into the symbol to output the ITALICS code (27;52) to the printer. To turn off the ITALIC mode, we would have to have another transliterate code to do it. AGAIN on a separate line we would enter .TL 126;27;53 The 126 is the ASCII code for the TILDE symbol (FCTN W). When the FORMATTER sees this symbol, it outputs the ITALIC OFF code to your printer and returns to normal PICA type. The line of text would look like this on your screen: Printer set for ITALICS.~

Each TRANSLITERATION must be on a line by itself followed by a carriage return. It is best to have your codes at the beginning of your file. Or a separate file can be created and then used with the .IF (Include File) command at the start of your text file.

## SPECIAL CHARACTER MODE:

This mode can be used in either the EDITOR or FORMATTER. Its purpose is to send a PERMANENT printer control code to your printer. To enter these codes into a text file, you would enter whatever codes are desired on a separate line within the file. All of your codes may be entered onto the same line ending with a carriage return. Just as with the Transliterate codes, you can have a separate file set up for whatever codes you require. You can also combine transliterate codes with Special Character Codes. The transliterations still must be on a line by themselves.

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## MEETINGS

The dates and times for the meetings of the Atlanta 99/4A Computer User's Group is the third Sunday of the month at the downtown Atlanta Public Library (off Margaret Mitchell Square) at 3 p.m. Whether or not to hold meetings this summer is still being considered. For more information call a club officer or 231-0992.

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# Bubble sort in Forth

By HOWARD A. ARNOLD

Here is a Forth procedure for doing a bubble sort on a disk resident file. You may incorporate it in your file management or data base programs or use it independently to do an alphabetic sort on a series of entries in order to test your Forth wings. Though written in TI-Forth, it should be easily convertible to other dialects.

In the interest of keeping the procedure on a single Forth screen, I have omitted on-screen comments. These comments and explanations are offered here in case the code isn't entirely self-explanatory.

## Line 1: Variable declaration

FLAG is used to indicate whether a position switch has been made of any records within a given pass through the file.

MAXRECS stores the total number of records to be sorted. It is initialized here to a value if constant, or may be changed by your application program to retain the number of records to be sorted if that number is changed in the parent program.

#RECORD is the number (between 0 and MAXRECS) of the record currently being accessed.

## Lines 2-3: Constant declarations

R-LENGTH is the maximum length of the strings being sorted.

W-LENGTH is the length of the string to be examined for alphabetic sorting.

FILES is the number of the Forth screen on which the first record is stored in the file to be sorted.

REC/BLK is the number of records which will fit on a given screen. This is calculated based on the R-LENGTH declared.

TEMP is a pad set aside for temporarily storing a string whose position is to be switched during the sort. It must be allotted a length at least as great as R-LENGTH.

```
SCR #88
0 ( BUBBLE SORT)
1 VARIABLE FLAG 16 VARIABLE MAXRECS 0 VARIABLE #RECORD
2 64 CONSTANT R-LENGTH 30 CONSTANT W-LENGTH 78 CONSTANT FILES
3 1024 R-LENGTH / CONSTANT REC/BLK 0 VARIABLE TEMP 80 ALLOT
4 : 2DUP OVER OVER 1 ; NOT 0+ 1 ; MOVE 2 / MOVE ;
5 : -TEXT 2DUP + SWAP DO DROP 2+ DUP 2- @ I @ - DUP IF DUP ABS
6 / LEAVE THEN 2 +LOOP SWAP DROP ;
7 : RECORD
8 #RECORD @ REC/BLK /MOD FILES + BLOCK SWAP R-LENGTH # + ;
9 : SWITCH RECORD DUP -1 #RECORD + RECORD DUP TEMP R-LENGTH MOVE
10 R-LENGTH MOVE TEMP SWAP R-LENGTH MOVE ; FLAG ! UPDATE ;
11 : SORT MAXRECS @ 1- 0 DO I #RECORD ! RECORD W-LENGTH I #RECORD
12 +! RECORD -TEXT 0 > IF SWITCH ENDIF #RECORD @ . LOOP ;
13 : DOSORT BEGIN FLAG @ IF 0 FLAG ! SORT ENDIF FLAG @ NOT UNTIL 1
14 FLAG ! ;
15 : WRITE #RECORD ! RECORD R-LENGTH EXPECT UPDATE ;
```

## Lines 4-6: Compatibility definitions

These definitions, mostly taken from Leo Brodie's "Starting Forth," provide compatibility between the FIG-Forth standards and the TI-Forth language. Note that the definition for MOVE, since it uses the previously defined word MOVE within its own definition, should be loaded only once. In other words, FORGET FLAG each time you reload this screen to avoid unexpected results.

## Line 7: RECORD definition

This word provides the address of the buffer storing the string currently being accessed.

## Line 9: SWITCH definition

This word switches the position of two strings in adjacent locations in the file. The string from the lower location is stored in TEMP, the next higher string stored in its place and the TEMP string is written to the higher of the two locations. The buffer is then marked with UPDATE so that it can be subsequently FLUSHED to the disk file.

## Line 11: SORT definition

This word examines two adjacent strings of length W-LENGTH using the word -TEXT defined on line 6. If -TEXT returns a 1, indicating that the strings are out of alphabetic order, the word SWITCH defined above is called, inverting the two

positions.

## Line 13: DOSORT definition

This is the final USER WORD which initiates the sort. It keeps track of the status of FLAG and continues calling SORT until a complete examination of the record is accomplished without the necessity for an alphabetical swap.

## Line 15: WRITE definition

In order to build a file to test the program, the word WRITE is provided. Use WRITE like this:

```
n WRITE (ENTER) xxxxxxxxxxxx
(ENTER)
```

where n is the record of the string to be entered, and xxxxxxxxxxxx is the string itself.

Be sure to change variable MAXRECS to agree with the number of records to be sorted with the command n MAXRECS ! (after loading the screen); n in this case being the total number of records to be sorted.

You'll find this to be a surprisingly fast bubble sort, I suppose because of the inherent speed of Forth.

Enjoy!

Arnold is a retired engineering manager of AT&T Technologies. He now does freelance writing and consulting both in computer programming and manufacturing technology. He can be reached at 210 Beech Valley Rd., Lewisville, NC 27023.

PRETTY PLEASE, PINCH MY DEAR

AUNT SALLY RUDELY!

by Jim Peterson

My apologies to dear old Sal. That mnemonic device is usually given as just "My Dear Aunt Sally", but I expanded it a bit. It is intended to remind you of the sequence in which your computer solves an equation, which is --

- (P) arenttheses
- (P) owers (exponentiation)
- (P) refixes (plus and minus)
- (M) ultiplication
- (D) ivision
- (A) ddition
- (S) ubtraction
- (R) elational operations

So what? Well, if one of your program lines isn't giving you the expected results, it may well be that you forgot to pinch Sally properly!

The computer goes through the line from left to right 5 times (I don't know if it really does, but that is the easiest way to explain it!) The first time through, it looks for a left hand parenthesis. If it finds one, it stops at the first right hand parenthesis. If it finds one but not the other, it CRASHES! When it finds a right hand parenthesis, it backs up leftward until it comes to the closest left hand parenthesis. It solves everything between those two parentheses, step by step in accordance with the

following priorities, and then erases those two. Then it goes through the same routine again until it finds no more parentheses.

Need a "for instance"?  
OK --

```
X = ( (10 * 2) - 6) + (8/4)
X = ( (20) - 6) + (8/4)
X = (20 - 6) + (8/4)
X = (14) + (8/4)
X = 14 + (8/4)
X = 14 + (2)
X = 14 + 2
X = 16
```

Next it goes through the equation looking for the caret sign. That is the little ^ that tells it to multiply the preceding number by itself as many times as the following number. Example -

```
4^2 means 4 times 4
6^3 means 6 times 6 times 6
```

Then, the prefixes. That just means that, for instance, if removing the parentheses from -(-6) has left you with --6, it becomes a +6, of course. I suppose that ABS and SGN are also worked here.

Now, multiplication and division. These are both done in one pass through because it doesn't make any difference which is done first.  $10 * 2/4$  is the same as  $2/4$ .

Next, addition and subtraction, also in one pass because  $10+4-2$  is the same as  $4-2+10$ .

Finally, the relational operations, which had best be the subject of a separate article. And finally the string concatenations, but let's keep old Sal out of those.

Note that everything between a pair of parentheses is worked as a separate equation, step by step in the above sequence, before the parentheses are erased.

So, why should you need to worry about all this?

Well --

$10*4-2=38$

$10*(4-2) = 20$

$10*4^3 = 640$

$(10*4)^3 = 64000$

$((10*4)^3 = \dots$ SYNTAX

ERROR!

Makes a difference, doesn't it?

The important things to remember are --

If you want to add two numbers together before you multiply or divide their sum, put them in parentheses  $(2+3)*4$ .

If you want to subtract one number from another before you multiply or divide the result, put them in parentheses  $(10-4)/2$ .

If you want to add, subtract, multiply or divide numbers before you increase them by any power, put them in parentheses  $(10*4+8)^3$ .

If you keep Sally in mind, you will have fewer bugs in your programs!

## BREAKDANCING

This program is a reprint from "ENTER" by Travis Works of Ringold, Georgia for the 99/4A in Basic. (Taken from the May issue of SPIRIT of 99).

Press a number key and they change steps. Hold one key down, four keep dancing.

```
10 RANDOMIZE
20 GOSUB 250
30 PRINT "BREAKDANCING!!!"
40 PRINT "HUMAN OR COMPUTER CONTROL???"
50 INPUT CON$
55 CALL CLEAR
60 IF CON$="HUMAN" THEN 120
70 BD=INT(RND*5)+153
80 CALL KEY(D,W,E)
90 IF E=1 THEN 120
100 GOSUB 180
110 GOTO 70
120 CALL KEY(D,BD,N)
130 IF N=0 THEN 120
140 IF BD=32 THEN 70
150 BD=BD+102
```

```
160 GOSUB 180
170 GOTO 120
180 CALL VCHAR(12,10,BD-(INT(RND*2))+1)
190 CALL VCHAR(12,12,BD-(INT(RND*2))+1)
200 CALL VCHAR(12,16,BD)
210 CALL VCHAR(12,20,BD+(INT(RND*2))+1)
220 CALL VCHAR(12,22,BD+(INT(RND*2))+1)
230 RETURN
240 GOTO 120
250 REM CHARACTERS
260 CALL CHAR(151,"000000000048B443B")
```

```
270 CALL CHAR(152,"0000824438383854")
280 CALL CHAR(153,"0010FE38384482")
290 CALL CHAR(154,"8090FC3AC9484808")
300 CALL CHAR(155,"00000000000847936")
310 CALL CHAR(156,"00107CBA7C281808")
320 CALL CHAR(157,"1424247808")
330 CALL CHAR(158,"41493E1C1C2214")
340 CALL CHAR(159,"40281E1D141414")
350 RETURN
```



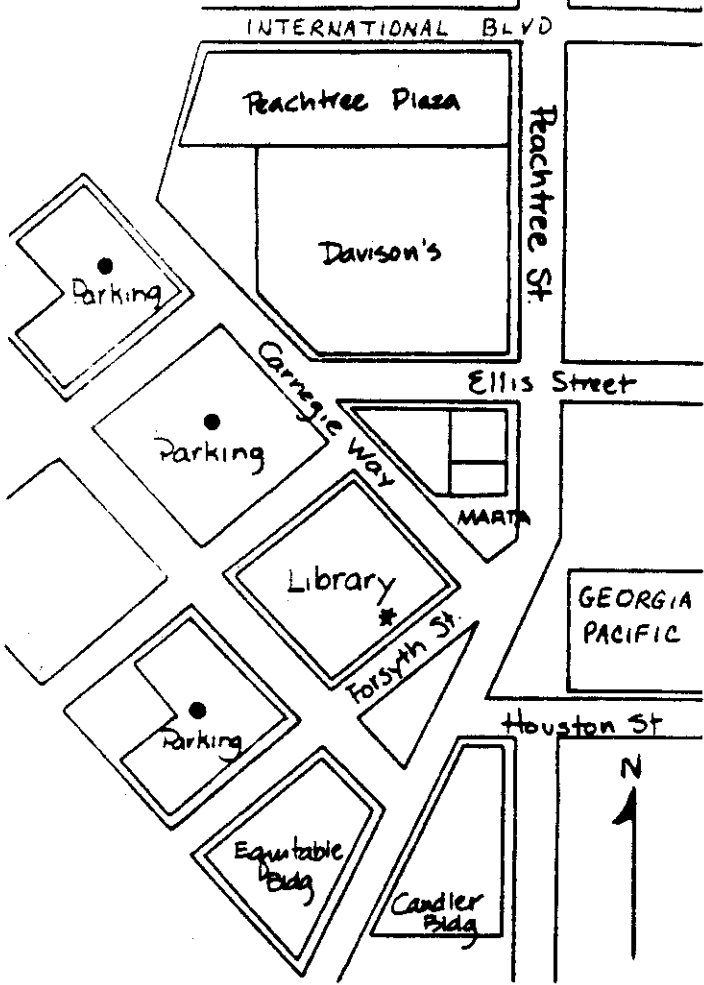
This is a demonstration of a letter head designed by bit graphics for the Gemini 10X printer. The entire letter head is programmed for TI-WRITER using the Transliterate command and various printer commands.

My experience indicates that a Transliterate command cannot be longer than one line. This appears to be the only limitation of the program. Your patience will get a real work out in building something like this letterhead, but it is a unique capability allowing personalized communication.

The following file was used to build the letterhead.

Ken Burdges

```
.CO Draft file commands, elite,
.CO dbl space, 1 1/2 & 1 in margin
.TL 91:27,45,1
.TL 93:27,45,0
.TL 60:27,66,3
.TL 62:18
.TL 123:27,52
.TL 125:27,53
.TL 126:27,66,2
.TL 47:27,85,0
.CO ^ELITE 12 CPI, [Underline], {Italic}
.CO <condensed>
.CO PERSONAL LOGO IN BIT GRAPHICS
.TL 33:27,49,13
.TL 34:27,85,1
.TL 35:27,14
.CO ! LINE FEED AND CARRIAGE RET, " FOR UNIDIRECTIONAL, # FOR ENLARGED
.TL 49:27,75,15,0,0,6,30,48,96,64,128,192,224,254,254,126,126,58,0
^^^1!
.TL 49:27,75,15,0,0,0,0,6,2,0,128,192,96,96,112,112,240,224,224
.TL 50:27,75,5,0,226,192,128,0,0
^^12^({#INNOVATIVE})!
.TL 49:27,75,15,0,0,14,124,240,192,192,70,126,126,126,120,112,96,192,0
^^^1!
.TL 49:27,75,15,0,0,0,0,6,30,240,192,0,0,6,30,254,240,224,128
^^1^^^^^^^^^^^^^^^^(ENGINEERING^CO.)!
.TL 49:27,75,15,0,0,0,126,254,0,6,30,126,254,192,0,0,0,0,0
.TL 50:27,75,15,0,0,2,2,2,2,2,2,2,2,6,6,6,6,6,6
.TL 51:27,75,15,0,6,14,14,14,14,14,12,28,28,28,28,24,24,56,56
.TL 52:27,75,17,0,56,48,48,48,48,112,112,112,112,96,96,96,96,96,96,64,64
.TL 53:27,75,6,0,192,192,192,192,128,128
.TL 54:27,75,5,0,128,128,128,128,128
^^12345!
.TL 49:27,75,15,0,0,0,128,224,96,248,248,248,248,248,248,240,240,240
.TL 50:27,75,15,0,240,240,224,224,224,224,192,192,192,192,128,128,128,128,128
^^12!
.TL 49:27,50
.TL 50:27,85,0
^12~
.CO PUT NUMBERS BACK TO ORIGINAL FORM
.TL 49:49
.TL 50:50
.TL 51:51
.TL 52:52
.TL 53:53
.TL 54:54
.CO BEGIN TEXT CONTROL
.LM 15
.RM 70
.FI
.IN +5
```



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