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The Ottawa T.I.99/4A Users' Group

NEWSLETTER

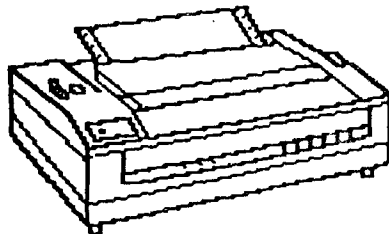
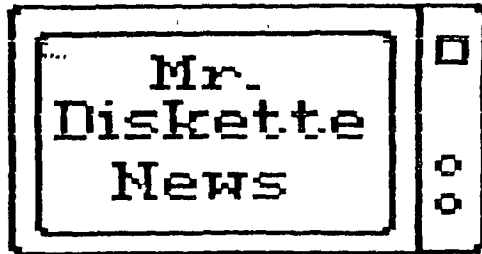
VOLUME 5 NUMBER 08.....OCTOBER 1986



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EDITOR'S NOTES

by Marg. O'Connor

There were several things that came up at the Executive this month.

The first and very important one is a plea for volunteers especially for the Membership Chairman, to replace Lloyd Galenzoski who is now Vice-Chairman and who would I am sure provide guidance to the person who volunteers to carry on.

We also need a Chairman to look after the software competition, to replace Jane Laflamme, who will help set it up but due to other commitments can't carry the load herself. Moosehead Lodge has again offered a holiday at their fine lodge as a prize. Lets hear from someone that is willing to get in there and help out.

The Executive needs to know if people want a Basic Workshop or not, so that they can plan for it. These workshops are very worthwhile particularly for those upgrading their systems, but also for those who wish to review the information. Think about it and let us know your wishes at the next meeting. The Question Box will be available on the Chairman's table for those who wish answers to questions they may have. The questions will be answered at the next meeting.

Sunday I attended the Computer Show at Ottawa U. and was again impressed with our own orphan. It can in my humble opinion still hold its own. There were representatives from ATARI, IBM, COMMODORE, SHARP as well as Exeltronix, G-plus, Mr Diskette and other suppliers and several User Groups. Jane came in near noon with the new RAVE keyboard and proceeded to demonstrate its use.

In this newsletter we are starting a series of articles by Jane Laflamme on using the TI Writer and also Bob Boone has submitted tutorials on Multiplan and Forth that we have permission to include in our paper, we will run these over the next few months. David Caron has also said that he will supply us with articles monthly so it looks as though the Newsletter will be very interesting for future issues.

We are still looking for news items and articles from our NUAC members and overseas contacts. Don't let us down!!! We have had items from England and Italy that were enjoyed by the people that contacted me and their remark was that they hoped there would be more in the future.

Last but not least I will include a list of the meeting dates for the balance of the year. The date and place for the Dec. meeting (if there is one) will be announced at the next meeting. Should we try to arrange a Christmas party??????

November	4	1986
December	TO BE ANNOUNCED	
January	6	1987
February	10	1987
March	3	1987
April	7	1987
May	5	1987
June	2	1987

The meetings will all, with the exception of December, be at 7 pm at the Merivale High School, 1755 Merival Road in Nepean. The meetings start at 7.45pm SHARP.

THE DEADLINE FOR THE NEXT NEWSLETTER IS THE 15TH OF NOVEMBER. Please try to get your articles in so that the Newsletter is on time.

See you all at the meeting.

CHAIRMAN'S TWO CENTS WORTH

by Berry Minuk

I would first of all like to thank you for re-electing me as Chairman for another year. I think this year's executive should be a very good one and we all look forward to providing more and better services to the membership during the coming year. But you have to let us know what you want. If you have any suggestions or complaints, let someone know about them. If you can't make it to the meeting, send us a letter or phone or leave a message on the BBS. For those who were not at the last meeting I would like to introduce the new executive made up as follows:

Past Chairman:	Bill Sponchia
Chairman:	Berry Minuk
Vice-Chairman:	Lloyd Galenzoski
Secretary:	John O'Connor
Treasurer:	Peter Arpin

We are still looking for an Archivist and we need a Membership Chairman since Lloyd will not be able to act in that capacity any more. Also of the greatest importance is a Co-ordinator for our 2nd TI-Fest. We need assorted other people for other positions as the same people can't keep doing everything.

At the last meeting I raised the question of the falling attendance at the Forth and Assembly Seminars. We are trying to find ways to improve them and if you have any questions or any suggestions please contact Jean-Pierre or myself. As an experiment I will try to put a simple Assembly Tutorial in the next Newsletter based on what we will cover on Oct 22 at the next Assembly tutorial. Elsewhere in this issue you will find a Forth article. Please let us have your reaction.

The next meeting will feature a demo and tutorial on using the new SBS since several people have had problems with it. In addition there will be a demo of the new keyboard from Rave and a report on the Chicago TI-Faire with maybe a Geneve to show.

Remember that we still have a cassette library and tapes are available by contacting Jack McAllister who is our new Sergeant at Arms.

The tutorial schedule for the next month or so is as follows:

Date	Event	Time and Place
Wed Oct 29	Forth Tutorial	7:30 Wordsworth H.S.
Wed Nov 05	Assembly Tutorial	7:30 Wordsworth H.S.
Wed Nov 12	C Workshop	7:30 Peter Arpin's
Wed Nov 19	Forth Tutorial	7:30 Wordsworth H.S.
Wed Nov 26	Assembly Tutorial	7:30 Wordsworth H.S.
Wed Dec 03	Forth Tutorial	7:30 Wordsworth H.S.

Plans for Basic/Extended Basic tutorials will be announced after Bill Sponchia has had replies to his offer at the last meeting. If you weren't at the last meeting and are interested please contact him.

I will see you all at the November meeting and let's have a super turnout for it.

=====

TIMP TIPS TECHNIQUES

Steve Zimmerman

At several user group meetings, I have heard quite a variety of questions about one of TI's most powerful software packages, TI's Multiplan spreadsheet program. Many people seem to be interested, but there are also questions on the uses of Multiplan and the techniques needed to get Multiplan working for you.

Stated simply, Multiplan is a worksheet (like an accountants pad or

a tablet) with rows and columns. One of the powers of Multiplan is that the sheet does not have to be added up by hand! Multiplan will add up rows or columns of figures for you (once you tell it just what you want it to do). This may not seem like a lot, but I got started in Multiplan because I had to add up 60 to 80 columns of figures, with 20 to 22 numbers in each column, every month. Moreover, when I did this with my trusty 10-key adding machine, the columns seldom balanced with each other. I don't have THAT problem now!

Multiplan also has logical operators, just like BASIC and Extended BASIC. You can use IF/THEN/ ELSE and other logical operators to avoid error messages and to cross check and validate your work. With all the built-in functions, Multiplan is one of the most powerful tools now available for the TI.

Getting started in Multiplan is very simple. FIRST, make a backup copy of your system diskette! You will also need a formatted diskette for data storage, so initialize one when you back up your TAMP system diskette.

The first, and possibly one of the least-known tricks, is choosing your screen color. After you plug in your Multiplan command module and select Multiplan from the master list, you see a screen which tells you to INSTALL PROGRAM DISK..PRESS ENTER KEY TO LOAD. BEFORE you press the enter key, you can choose one of 12 color combinations. This is done by stepping through the combinations with the space bar. Once you have one you like, THEN press ENTER. You can't change this once you are in the program. To select another set of colors, you will have to QUIT (after saving any work you want to keep) and then restart.

Multiplan will then load and display the basic Multiplan screen. This shows the window you are in (on the upper left, #1), the row numbers and column numbers (across the top and down the left side), the cell pointer (which highlights the active cell--the one you are in now), the command line, and so on. Commands may be selected in one of two ways: by stepping thru the command line with the space bar and pressing ENTER when the command you want is highlighted, or by keying the FIRST letter of the command. Usually, keying the first letter is much faster.

The first command I use is the Opt command, for Options. I normally set recalc to NO, as otherwise there will be a delay after a value is entered into a spreadsheet while the sheet is recalculated. With small sheets, this may not be a problem, but with the size sheets I use (300-400 cells, and 95-99% of available memory used), it takes 2-3 minutes for the sheet to recalculate. This takes A LOT of time. It's much easier to set recalc to NO, enter your values, and use fctn 8 to recalculate after all new values are entered. DO recalculate before you print a sheet! Multiplan will automatically recalculate the sheet when you SAVE it, but DOES NOT before you print it! So, if you have entered new values with recalc set to NO, and then print the sheet BEFORE you SAVE it, your printout will NOT have correct values in it! Another useful command is the NAME command. Briefly, this allows you to assign a name to a cell or range of cells. This is needed to use the Xtern (external) feature (about which more in a future column), but can be useful in that you can NAME a range of cells (for example, SALES), and then use the name in a formula. This may be easier than referring to the range by row and column numbers. SUM(Sales) is easier to enter (and to understand!) than SUM(R2C3:R4C35)!

If there are any questions or topics you would like help with or which you would like to see covered in this series of columns, leave me a message on either the SCCG or TI-SIG board, or let any of the board members know, or just ask me at a user group meeting! I'll try to cover any topics of interest, and will be happy to try to find answers to questions which I might not know off-hand! As is says elsewhere, your input is needed!

C99 REL2

FROM TI-LINES BY Stephen Shaw

This latest release of c99 from Clint Pully is now fully compatible with FUNLWRITER, and memory image files generated from source code compiled by this release WILL run from FUNLWRITER.

C Functions included:

CONV;C String -> int conversion functions
FCOPY;C Simple file copy program
RANDOM;C Random number generators
SOUNDS;C Simple beep and honk fcns
BIT... Bitmap graphics functions and documentation
FLOAT... Floating point functions and documentation
SPEECH... Speach function and documentation
STRINGFNS Library of string manipulation functions.

AND MANY OTHERS.

C99REL2A includes version 2.0 of the c99 compiler, console and file I/O libraries and functions, the RUNOFF text formatter, and documentation.

This release includes the standard formatted output functions in object form, printf, fprintf and sprintf perform as in standard C and support c, d, o, s, u and x conversions. A REF directive (cf manual) must be included for each function used. At load time, PRINTF and CFIO must be loaded. If you know of anyone who has received an earlier version of c99, please feel free to provide them with this version. CAUTION: Object files produced by earlier versions of the c99 compiler are not compatible with c99 v2.0. You should re-compile and re-assemble all functions and libraries to ensure compatibility and to take advantage of the shorter, faster code generated.

BROWSING THE LIBRARY

--with STEPHEN BRIDGETT

HAPPY AUTUMNAL EQUINOX - I have just completed my last military trade course (including astronomy) and what a relief. After accepting this job as librarian, I was traumatically removed from my TI console for the month of October! Never mind, here we go again.

Now a little insite into last month's 'Disk of the Month' - It's a dilly and I suggest everyone at least have a look at it. In fact, it's so good and turnout at the October meeting was, shall we say 'moderate', and to give me a chance to get up to speed, the same disk will be available in November. Now I should say that the disk was previously available for \$22.95 and worth every penny. But it is yours now, through co-operation with the Boston Computer Society for the low club price of \$3.00. Just to emphasize the value, and get a chance to talk to some of the members, I will download the 'intro' of the disk to anyone who requests it. My number is 523-8806. The intro is very informative. Complete docs are on the disk.

I want to make a request now to anyone who comes across programs for the TI. The library will continue to grow with your support. Please offer to type in and submit to the club library any programs you come find. There are plenty of good ones out there and more coming all the time. In fact you would be amazed how they get overlooked just because we assume they are already in the library.

That's it folks! See you at the meeting!

Cheers --- Stephen

PRIOR PATTERNS October 86
By Bob Boone

Congratulations to Bill Sponchia, Berry Minuk, Lloyd Galenzoski, Peter Arpin and John O'Connor on your appointment/elections to past President, President, VP, Treasurer and Secretary for the club year 1986-87. I look forward to working for and with you all in the time I have remaining in the Ottawa area.

Yours truly has been reduced from runner-up for President to Fest co-ordinator for the 1987 TI-Fest North. (I consider it a promotion). Task 1 is to put a date to it. It was suggested by some of those that travelled to our last one that we move it further on into Spring to take advantage of Tulip-festival time here in our Nation's Capital. I think its an admirable idea so hereby declare May 16th 1987 to be the magic date. Task 2 will be to produce a provisional budget for the Fest. That is ongoing now and will be presented to you for approval before year end. Anyone with ideas(good or bad) for the Faire, and especially those that might cost money, please pass them on. Also keep in mind its never too early to volunteer your services in a good cause.

Wow! Another month has flown by. What I need most is not a day with longer hours, its a month with far more days!

Negotiations are hot and heavy with Myarc regards the importing of the new TI compatible computer; affectionately; but NOT officially labelled GENEVE. Its official name is the 9640 Family computer. The battleplan is to arrange that our very own Jane Laflamme become the sole importer for the product here in Canada. She will supply all known TI distributors with the machine at a wholesale rate and agree not to undercut those retailers in their territory; she will then be free to compete with the retailers across the rest of Canada. Looks like the price for the machine will be about \$720 CDN and we're taking orders now for delivery in November. We think we'll be in a position to offer a high grade RGB monitor at a rediculously low price too, so check with first for a quote before you commit yourself elsewhere. We have been promised by Mr Phillips that we will have a new machine waiting for us in Chicago to bring back for our November meeting; so its wait and see, at this point.

Joypaint-99 arrived in time for its debut at our October Carleton UG meeting and suitably impressed those in attendance. It's powerful! It's versatile! It's easy to use!and it's relatively expensive at \$50 CDN per personalized package. My personal opinion is it's worth the money and that; at the very least every newsletter editor in the country should have one(perhaps at club expense). This package can be bought direct from Great Lakes Software at a cost of \$39.95 US + \$3 for shipping at the following address:

Great Lakes Software
804 E. Grand River Ave.
Howell, Michigan
USA 48843or

If you're not in a hurry you can order through me for \$52 CDN + PST + \$1 for postage and handling and save yourself approximately \$10 to boot.

Bruce Ryan, of RYTE Data, called last week to fill me in on one of the products I mentioned seeing at his place last month; the Atronic disk controller I saw will apparently handle up to 3 SSDD drives. We had a rather long chat(his nickel, I'm happy to report), on many sundry topics and still insists the 80 column card isn't yet available from Mechatronics GmbH. I'm in a quandry on this one as I have seen reviews of the product in newsletters from the US and Cynthia Becker, from Boston, who regularly calls our BBS, says she has one. If it exists, we'll see it, and try to get one in Chicago.

I saw a Corcomp 512K Memory-Plus in North Bay last weekend. Its owner, Pat Graham, had nothing but praise for the product. It's not battery-backed, but does come with a power transformer which, if plugged into your home system on a separate bus, will allow it to retain its contents on power-down of the rest of your system. It seems the ideal way for someone with a Corcomp Micro-Expansion system to go. As mentioned in an earlier Prior Patterns column

Myarc's 512K card also has this feature, though in Myarc's case the feature is undocumented and the required transformer is not supplied. I have a working Myarc 512K card in one of my systems now and though I like it, I sorely miss the battery back-up on the Horizon RD and its built-in DM-1000. The Corcomp 512K and the Horizon RD both have resident Managers, whereas the Myarc one has only RDDIR to allow cataloging of only the Ramdisk. The one powerful feature of the Myarc card which isn't yet available elsewhere is the CALL PART command which allows you to allocate part of its memory as a print spooler.

On balance, and I admit, mainly because of MY main applications for the system, which are; library maintenance and correspondence and writing, I'd grade them; Horizon 1st; Corcomp 2nd, and Myarc 3rd. Another factor affecting this rating is access to Corcomp's Triple Tech card for print spooling applications, of which I have many. In my view, one of these three products should be on every expanded system in the world. They make home-computing even MORE of a pleasure! I have no current price info on either the Corcomp or Myarc ramdisk systems(I built my Myarc one up a bit at a time) but will likely be able to quote prices AC (After Chicago). I'm currently selling Horizon's RD; fully assembled, DSSD, for \$245; kit, including board for \$205; kit only for \$145 and board only for \$75. PST(if applicable) and postage extra.

Corcomp has leapt a big barrier and announced its debut in the software market, with WRITERease---An all new TI-compatible word processor; with built-in spellchecker. Slated for release in Mid-October, there will hopefully be an opportunity to see it in action in Chicago as well.

DM-1000 Version 3.5 was handed to me at the Carleton UG meeting last night and will be going to Chicago with us at the end of this month. We've added two new features to File utilities(namely T and P) which respectively allow reading and printing of DV/DF-80 files from within the manager environment. Additionally we've corrected a long-standing problem with the handling of 1 sectorred files on a disk. Steve McWatty has donated his LABLER program to the group(which I've been using for a long time to lable our fairware). It will be going south west with us too. I'm still hopeful that Mauro will have an update to his MP-Sideways package that will travel well too! Tom Bentley is supplying us with his c99-Window program(unfortunately incomplete) to tickle a few fancies with on the trip.

An order placed on behalf of the Ottawa and Almonte User Groups with DataBioTics way back last June has finally been tracked down and delivery has been promised soon. Probably by our November meeting we'll have quite a few new toys for all to see. Joypaint 99 will be there; Corcomp's Home Sentry system will be there and (we sincerely hope) Geneve will be there too. Any way you look at it you should be there too!!!

Bad news! The executive is considering cancellation of our December general meeting. Merivale highschool is unavailable to us on the first Tuesday in December and they can't decide what to do about it. The motion to cancel the meeting has been made and approved but to their credit they're still looking for alternatives. We're gonna have to give them some feedback to save the day. One avenue they're exploring is holding that meeting at CDC in Bells Corners. I see that as preferable to cancellation but would personally rather stay at the high school cafeteria and hold the meeting on another night. Let them know somehow whether they should look for another venue or another night. Myself, I begrudge the two meetings we miss each summer and hate the thought of losing one tenth of those we have per year.

***** FORTH TIDBIT NO. 1 *****

For some time now I had been bugged by the fact that the UNIX system I use at work displays some of the screen prompts on a white (green on my terminal) background and that really makes them stand out. Perhaps this is not so important on a 32x24 display, nevertheless I had not been able to devise a simple routine for doing the same in BASIC or X-BASIC. That really irritated me. Now, in FORTH, it turned out to be almost too easy.


```

BASE-R HEX
0 VARIABLE KY 0 VARIABLE KV
: ZEROSSET 0 0 KY ! KV ! ;
: REV R R R R R FFFF XOR R FFFF XOR R FFFF XOR
  R FFFF XOR
: ECHR KV EMIT8 ;
: XFORM DUP KY ! CHARPAT REV KY 80 + DUP KV ! CHAR ;
: PUTCHR XFORM ECHR ZEROSSET ;
DECIMAL R-BASE

```

To put this short (184 byte) routine to work, you can do several things, for example:

a) 65 PUTCHR will display ASCII 65 (A) with its FG/BG colors reversed

b) : PYN 41 78 47 89 40 5 0 DO PUTCHR LOOP ;

will give you a (Y/N) prompt, again in reverse video. The ASCII values are put in reverse order and the counter for the DO PUTCHR LOOP is set to equal the number of characters in the prompt. This method can be used to define a set of prompts for your program, and put them anywhere with n n GOTOXY word.

c) : RVALL 126 32 DO I XFORM LOOP ;

will transform all of the printable ASCII characters from 32 to 126 into R.V characters but their ASCII values are 128 higher than that of their corresponding 'normal' character. Thus there is no effect on the normal display. Any of the R.V. characters can be displayed by ch 128 + EMIT8. (Make sure to use EMIT8 or you will get the normal character.)

d) : RVT BEGIN KEY PUTCHR ?TERMINAL UNTIL ;

is simply an indefinite loop which let's you type in reverse video mode, at least until you get sick and tired of it, then you can use FUNCT-4 to get back to normal.

Well, folks, that does it. If you are interested in the gory details, read on and I will explain how it all works.

First, set up two variables, one (KY) for storing the original ASCII code, the other (KV) for the high order ASCII code, i.e., the ASCII of the character with the video reversed. ZEROSSET is just a utility word tho reset both of them to zero, so that the process can be repeated ad infinitum. REV is the key word of the entire routine, why will be explained shortly. XFORM takes the specified ASCII, DUPs it and puts a copy into KY, then it obtains the pattern identifier (CHARPAT). CHARPAT leaves NNNN NNNN NNNN NNNN on the stack which REV pushes (R) onto the return stack. Since there are four parameters, using the return stack is more convenient than it would be to create 2SWAP and performing a bunch of SWAPs, ROTs and OVERs. As they come off the return stack (R), a bit-wise logical exclusive or (XOR) with FFFF is performed on them. Now the four numbers on the parameter stack are complements of the original numbers, an F is now a 0, an E becomes a 1, etc. The result is that every 'on' bit has been turned 'off' and vice versa. These parameters are now used in conjunction with nn CHAR to define a new character. The 'nn' for the new character derives from the old ASCII (KY) plus 80 (128), which means that all new reversed video characters reside in character set 16 and above, and do not interfere with (or redefine) the existing ones. DUP KV ! put a copy of the high-order ASCII value into KV from where ECHR (KV) retrieves and displays (EMIT8) it. PUTCHR is the top-level word which pulls the whole routine together.

Hope you find a use for this in your programs. I know I will be reworking some of mine to give them that 'professional' look. Who knows, it may even impress somebody.

(EOF) Lutz Winkler

MORE ON EXTENDED BASIC

by Mike Kabals from TI-LINES

One of the more advanced features available to the programmer is the ability to chain programs by using the RUN statement within a program. This allows the creation of software that would not fit into the memory all at once. When you'r done with one program segment, just "RUN" the next one.

Unfortunately, there is one bug. The RUN statement clears out all variables even if it is executed from within a program. Type in the following 2 programs and you will see for yourself. Be sure to save the first as "DSK1.DEMO1A" and the second as "DSK1.DEMO1".

```
100 CALL CLEAR
110 DISPLAY AT(1,1): "TYPE SOMETHING"
120 ! ACCAPT AT statement is
130 ! needed to put text in
140 ! a predictable screen
150 ! location
160 ACCEPT AT(2,1):A$
170 ! All variables will be
180 ! cleared when the next
190 ! statement is executed
200 RUN "DSK1.DEMO1A"
```

```
100 CALL CLEAR
110 ! Variable has been
120 ! cleared by RUN
130 ! statement
140 PRINT A$
```

See what I mean? Somewhere between DEMO1 and DEMO1A, the value of A\$ got lost. Now you could, if you wanted to, create a file, store A\$ in it, and then read A\$ from that file after entering DEMO1A, but that seems rather wasteful if you only need to pass one or two variables. In the remainder of this article, I will show you two other methods I have found to get around the problem.

The first method will work even if all you have is a console and cassette ecorder (although you'll have to change all of the program names to "CS1"). That method is to use the screen as auxiliary memory. Just display the information you want before executing the RUN statement and your chained program will be able to take the data right off the screen as demonstrated below.

Load DEMO1 back into your computer and modify its RUN statement to chain in DEMO2A as shown below. Then save the first program as "DSK1.DEMO2" and the second one as "DSK1.DEMO2A". Finally, load and run "DSK1.DEMO2" and what you type in the first program should be correctly printed by the second.

```
100 CALL CLEAR
110 DISPLAY AT(1,1):"TYPE SOMETHING."
120 ! ACCEPT AT statement is
130 ! needed to put text in
140 ! a predictable screen
150 ! location
160 ACCEPT AT(2,1);A$
170 ! All variables will be
180 ! cleared when the next
190 ! statement is executed
200 RUN "DSK1.DEMO2A"
```

```
100 ! Read what last program
110 ! left on the screen.
120 ! Offet of 2 is needed
140 ! ACCEPT and GCHAR
150 ! statements
160 A$=""
170 FOR I=3 TO 30
180 CALL GCHAR(2,I,A)
```

```

190 A$=A$&CHR$(A)
200 NEXT I
210 ! Parameter has been
220 ! passed using the
230 ! screen as auxiliary
240 ! memory
250 CALL CLEAR
260 DISPLAY AT(5,1):"YOU TYPED:"
270 DISPLAY AT(6,1):A$

```

For this second method you will need to have the 32K memory expansion installed. The trick here is to use the space reserved for an assembly language program for temporary storage. This has the advantage that you don't need to display something to pass it to the next program. Be sure to use the memory between 9984 and 16184 after executing CALL INIT because the rest of the memory is already in use by your program and other things.

Save the first program as "DSK1.DEMO3" and the second as "DSK1.DEMO3A" Then run "DSK1.DEMO3".

```

100 CALL CLEAR
110 PRINT "TYPE SOMETHING:"
120 ACCEPT A$
130 !
140 ! Reserve space for
150 ! assembly language
160 ! program
170 !
180 CALL INIT
190 !
200 ! Store length of string
210 !
220 A=LEN(A$)
230 CALL LOAD(9984,A)
240 !
250 ! Store string
260 !
270 FOR I=1 TO A
280 CALL LOAD(I+9984,ASC(SEG$(A$,I,1)))
290 NEXT I
300 CALL CLEAR
310 RUN "DSK1.DEMO3A"

```

```

100 CALL CLEAR
110 PRINT "YOU TYPED:"
120 !
130 ! Get string length
140 !
150 CALL PEEK(9984,L)
160 !
170 ! Get string
180 !
190 X$=""
200 FOR I=1 TO L
210 CALL PEEK(I+9984,X)
220 X$=X$&CHR$(X)
230 NEXT I
240 !
250 ! Print string
260 !
270 PRINT X$

```

You may have noticed that I have only used string type variables in these examples. That's because the data manipulations required are a bit simpler for string variables. That doesn't mean that you can't pass numeric variables, however. Just use STR\$() to convert them to string variables and VAL() to convert them back. I'm sure it wouldn't take too much effort to figure out a way to pass them directly, either. Just be careful if you use the second method that you don't try to pass a number greater than 127 or less than -128 unless you split it up into more than one byte.

Finally, if you don't have a disk drive and want to try the first method, type in the program below and save it to CS1. Then type in

the DEMO2A program and save it to the same cassette WITHOUT rewinding it. Then rewind the cassette, load the first program, and run it.

After the program begins running, it will ask you to rewind the cassette. Ignore this message and just proceed to load in the second program or you will end up chaining the first program back into memory.

The reason lines 110 and 160 of the first program had to be modified is that the computer prints 14 lines to the screen when chaining the second program. If this offset had not been accounted for, the second program would have read the wrong portion of the screen.

```
100 CALL CLEAR
110 DISPLAY AT(15,1):"TYPE SOMETHING."
120 ! ACCEPT AT statement is
130 ! needed to put text in
140 ! a predictable screen
150 ! location
160 ACCEPT AT(16,1):A$
170 ! All variables will be
180 ! cleared when the next
190 ! statement is executed
200 RUN "CS1"
```

=====

DETAILED DESCRIPTION OF DISK FORMAT

from TI-LINES

A single sided diskette used with the T.I. Disk Controller has the following specifications:

Diskette type:	SA 104 (ANSI standard 5.25")
Encoding method:	FM single density
Capacity:	92160 Bytes per disk
	2304 Bytes per track
	256 Bytes per sector
	40 Tracks per side
	9 Sectors per track

The capacities given are for a single sided, single density system. Using double sided will of course double the bytes per disk, using double density (Myarc type controller) will double the capacity again.

For easy of description, the following information assumes that the diskette is addressed as a 'linear' medium, that is to say, sector 0 is the first sector of track zero, sector 1 is the second and so on -- sector 359 being the last sector of track 39. It should be noted that this is not strictly correct as the sectors are in fact 'interleaved' on each track to obtain faster access when reading. If a double sided set up is being used then the physical layout of the second side is the reverse of the first side, that is to say, sector 360 is physically on the opposite side of the disk to sector 359, and sector 719 is opposite sector 0.



ELIMINATE FAN NOISE

by Al McLellan

Tired of that noisy fan in your Peripheral Expansion Box (PEB)? Well, there is a way to get rid of it. I ordered a quiet replacement fan advertised by STATCO in MICROPENDIUM, at a cost of US \$19.00 plus US \$3.85 for shipping charges to Canada. After about three weeks it arrived, with a letter saying that the advertised fan was no longer available. The one supplied was more expensive, US \$27.35 including shipping charges. Ouch! Anyway, having gone that far, I decided to install it.

Apartment living meant that I had to use the dining-room table, well padded with newspapers, for a work-bench. As per the instructions supplied, I disconnected everything from the PEB, waited the two minutes for safety's sake before removing the top cover, then cleared out all the cards and the disk drive. Next, the six Phillips-head screws on the back were removed. Note that these did not include the two screws that hold the top cover retaining clips to the back panel. After that, the PEB was turned upside down, and all the Phillips-head screws on the bottom were taken out. Then the PEB was rotated onto its back, and the outside cover was pulled up and off. That required a bit of fiddling to get everything in line so it would slide free, but it only called for about two salty words of encouragement. Now for getting the noisy original fan out of there!

The nuts holding the fan to the chassis are hard to get to. Needle-nose pliers helped, but not enough. However, I found that a small nut-driver socket of the right size could be slipped on the troublesome, least-accessible nut. The nut-driver handle wouldn't work because the only access was at too much of an angle. Maybe a flexible socket joint would have worked, but I didn't have one. By a bit of luck, I had a set of metric Allen wrenches, and one of these was a loose enough fit to get into the top of the socket at an angle, yet big enough to turn the socket with the considerable torque needed to get that pesky nut going. Once I found that this makeshift rig would work for the nut I had not been able to get off with the needle-nose pliers, I used it on all the nuts, and it worked a treat.

The next step was to disconnect the two power wires. These have butt (some call them spade) connectors, and pulling them apart looked easy. Wrong! I would have sworn they were soldered together. It took a pair of standard pliers on one side, and the needle-nose on the other, to get them apart. The force needed was such that, without great care, there was a good chance one set of pliers would have rammed into the middle of some of that delicate electronic stuff when the connector finally parted. The second one was just as tough, by which time the supply of censorable words was running low.

With the old fan out of the way, the new one was set on the mounting studs to mark where the power leads should be cut. Next, the two power wires from the new fan were cut where they had been marked, the insulation was stripped, and two butt connectors, from good old Canadian Tire, were crimped on. Now came another bit of luck.

The airflow direction was shown on the fan by an arrow. As you know, the fan pulls air out from inside the PEB and exhausts it out the back. After mating the butt connectors I decided to check that the crimping was good and that the fan would work before putting those mounting nuts back on. I carefully put the PEB upright with the new fan just hanging on the studs. Being careful not to touch the box, I plugged it in and just as carefully turned the power switch on. The fan revved up, but I noticed that it was blowing air into the box. The box was switched off, power cord unplugged, and two minutes allowed before reversing the fan's power wire connections, and the test was repeated. The result was the same; it was still sucking instead of blowing. Fortunately, the chassis of the fan allows it to be mounted pointing either way, so I reversed it (airflow arrow now pointing toward the inside of the PEB) and put the mounting nuts on fairly easily with the socket and Allen wrench lash-up. A final test, still being cautious and remembering the two-minute wait, showed that the air was blowing out of the box as it should.

Putting the box back together was the reverse of taking it apart. Again, getting the outside cover to slide on with the chassis on its back was a bit troublesome. A word of caution: before putting any screws in, make sure that the power switch assembly is properly set into its slot in the front of the cover. I didn't and the switch ended up recessed and off center,

which went unnoticed until everything was reconnected. It works, so it's going to remain unsightly until the PEB has to be taken apart for another reason.

The big moment was throwing that recessed switch when all the boxes and wires were back together. I actually had to bend down with an ear close to the PEB to make sure that the fan was working. Also, with a bit of contortion I got a hand behind all the wires and things, and verified that the air was actually blowing out of the PEB at a good rate. What a pleasant change to have only a slight whisper of sound instead of that annoying dull roar that was the constant companion of the running system!

Well, maybe so, you say, but that's a heck of a price for some peace and quiet. Don't give up yet. I was leafing through Radio Shack's catalogue recently, and one of their fans caught my eye because it looked very much like the one I had just installed. A trip to the nearest store confirmed that it looked exactly the same, and that the mounting holes in the fan frame were an exact match for the studs in the PEB. It's interesting to compare the specifications of the three, as shown in the table below.

	<u>Airflow</u> (Cubic Feet Per Minute)	<u>Power</u> Draw (Watts)	<u>Noise</u> (SPL dBA)
TI Original	22	11	Too much!
Statco	27	6.9	36
Radio Shack	32	11	38

The 1986 catalogue number of the Radio Shack fan is 273-242, and the best news of all is that the price is Cdn \$19.95! We can't be sure what the effect of the additional 2 dBA of noise would be, or that it is a perfect match, until someone actually tries it. After what I've already sunk into the quietening project, it won't be me. How about someone else, who is fed up with the old TI fan's noise, giving the Radio Shack model a try and letting us know how it works in a follow-up article? Good Luck.



WRITER-WROUTES
by Jane Laflamme

To prove my point about the TI-Writer Formatter mentioned in the review elsewhere in this Newsletter, I will be giving a few of my own tips over the next few months.

I have found that the .TL command seems one that is misunderstood or avoided. To me the Transliterate command is one of the most powerful formatting tools in the TI-Writer package. Perhaps the best way to describe it, for you BASIC programmers, is as a "string variable". If you wish to set your printer in BASIC, you might do it this way:

```
100 OPEN #1:"PIO"  
110 A$=CHR$(27)&CHR$(83)&CHR$(0)&CHR$(15)&CHR$(27)&CHR$(49)  
120 PRINT #1:A$
```

What I have done with the BASIC statement 110, is send characters 27, 83, and 0, to set my printer, an SG-10, to Superscript mode; Character 15 will condense the print; and 27 and 49 will set it to 10 lines per inch. Once the variable A\$, line 120, has been sent to the printer, the printer will be set in that mode until it is turned off. The .TL command can be used in the same way through your word-processor. Of course, TI-Writer will open and close the file link to the printer for you automatically so you don't have to worry about line 100. The equivalent .TL statement would read this way:

```
.TL 60:27,83,0,15,27,49(CR)  
<(CR)
```

The character I have used for the "variable" is 60 or "<". When the Formatter encounters the "<", as instructed, it will send the "string" to the printer. Again, once set, the printer will stay that way until it is turned off. It therefore leaves that character open for use within that particular document for another use. Or you can .TL it back to itself, .TL 60:60, and print it as itself in the same document. You therefore can use any characters you wish after they have done their "job". I have used character 60, but you could use any character you wish. A .TL command should be on a line by itself and not exceed the 80 columns.

In the last Newsletter, Margaret suggested a method of formatting your article with the commands she would like. I noticed she had to put the period in by hand. A way around this is to add a "required space" before typing in the command such as ".^ .TL 60:27,69(CR)" but add ".LM -1(CR)" before, to line it up with the rest of the text, and ".LM +1(CR)" to realign the balance of your text. Type it in this way:

```
.LM -1(CR)  
.^ .TL 60:27,69(CR)  
.LM +1(CR)
```

I leave it to you to decide whether it is worth it or not, but the point is, with the required space in front of it, you can use a period at the beginning of a line. The formatter will not look for a formatting command after it and disregard the rest of the line. (By the way, the "^" character cannot be printed through the formatter but to get around this, I used the .TL command again, .TL 126:94. When the formatter encountered the tilde in my file, as instructed, it replaced it with "^", character 94.) Are you beginning to understand the power of this command?

As stated above, it is easier to send a "string" to the printer rather than two or three .TL commands. So in our Newsletter format it could be set up this way:

```
.TL 60:27,69,27,48(CR) - (Send characters 27 and 69 for emphasized  
print, and characters 27 and 48 for 8  
<(CR) - (Send the "variable" to the printer)
```

Page set up could be sent in one line rather than several.

```
.PL +21;FI;AD;LM 6;RM 72;CE 2(CR)
```


(Add lines to Page Length, Fill in, Adjust right margin, Left margin at the 7th column, 0 counts as the first, Right Margin to end at the 73rd column, and centre the next two lines. Count empty lines for it will "centre" them too!)

An even better way would be to set up a file with the above two sets of commands and call it say, NLSETUP, (for Newsletter set up), then just include the following line in your article:

```
.IF DSK2.NLSETUP(CR)
```

The file could be saved this way:

```
.CO Filename: NLSETUP(CR)
.CO Created: October 12, 1986(CR)
.As the Formatter disregards any text after a period,
."CO" for COmment is optional!
.(CR)
.TL 60:27,69,27,48(CR)
<
.PL +21;FI;AD;LM 6;RM 72;CE(CR)
```

I hope I have given you a few things to think about, but if you have questions please don't hesitate to contact me, either by phone or writing to me in care of the Newsletter. I will attempt to answer your questions in future columns.

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Dear Executive Members;

Having sat on the Board of quite a few volunteer organizations in my time, I realize that often, Executive Members can feel as if they are operating in a void, with little feed-back to let them know if their decisions are appreciated, opposed or even noticed. I felt I would take this opportunity to commend you for your efforts, on my behalf, particularly as, due to time constraints, I am one of those faceless members who seldom manage to make it to meetings. I particularly appreciate the effort which goes into the Newsletter, as it is my sole source of information about the group. Anyway, keep up the good work, we do appreciate it, and we share your pride in this organization.

On a different note, I have been having great difficulty trying to get my printer to produce graphics. It is a CITH 8510A and overall, I have been extremely pleased with its quality and performance. For some reason it just does not like graphics. Using the Pro-Writer configuration of GRAPHX, it will produce great pictures, but it insists on drawing a single solid, horizontal line after every graphics line, giving my picture a striped effect. I have been unable as yet to have it print anything intelligible using TI ARTIST. I have tried switching to 8-bit, disabling the carriage return and even switching to unidirectional print, all to no avail. Does anyone out there have any bright ideas? If so, I can be reached at the number below.

Thanks,

Ann Gonneau
835-3344

=====

TI-WRITER TIPS AND TRICKS

A review by Jane Laflamme

"How did that happen?....Is there a way to?.....What did I do wrong?....How can I do this more quickly?....". I presume we have all asked some of these questions when using TI-Writer! Now there is help for the more experienced user. The booklet is written and compiled by Joyce Corker of the Boston Computer Society and is a "must have" if you are using TI-Writer to any extent. It gives tips and tricks in very clear language pertaining to using the package and using it with the Gemini 10X Dot Matrix Printer, one of the more common printers found connected to our little machine. Such as: How to get around "that darn punctuation Mark!" and "the asterisk 'bug' in the Format mode"; underlining in the Editor and how to print a longer line; little known features such as how to change a file from Display/Variable to Display/Fixed for use with the editor/assembler package, and so on and so forth.

A couple of ideas I was fascinated with was a Transliterate file of codes, run through the Formatter, to set up the printer before running your file. The other, was how to "fancy" up your documents using the predefined graphics characters available on your printer. Also added is a chapter on how to use the module with your modem....

I disagree with Ms. Corker when she says that expert TI-Writer users avoid the FORMAT section and print from the EDITOR whenever possible. Once you learn how to use the Formatter, I believe it is better to let it do the work for you!

TI-Writer Tips and Tricks was copywrited in January of this year by the Magnetic User Group Disk Edition and updated in June 1986, sponsored by Boston Computer Society. I highly recommend this booklet. To get your copy, send \$5.00 U.S. funds to:

TI-WRITER TIPS AND TRICKS
by Joyce Corker
Boston Computer Society
TI-99/4A User Group
One Center Plaza

TI-99/4A MODIFICATION TO ACCEPT
THE TIM 9904A CLOCK DRIVER

by David Caron

To many of you, I am still a stranger, however I intend to change that. I will start with a brief explanation of the reason why I decided to write this article.

Last December I was an enthusiastic programmer, like most of you. However that drastically changed when my power supply broke down. This failure was due to an accidental short while I was modifying my console. Little did I know that this was only the beginning. After I finally replaced the power supply, I accidentally blew 9 chips on the mother board while attempting to repair my ancient TV-set (moral: unpolarized TV-sets do NOT mix well with computers). During the summer my teacher was so kind as to let me compare his functioning TI-99/4A with mine. Shortly afterward, I found myself trying to repair two TI's. Over the summer I discovered several interesting differences between my TI and my teacher's TI (I own a beige TI-99/QI while my teacher possesses a black TI-99/4A).

One of these differences was the fact that the black computer uses a TIM 9904 clock driver which is now obsolete (the only place you will find one is in another black console). However the beige model contains a TIM 9904A clock driver which is nearly identical to the TIM 9904 and which can be bought at Arrow Electronics for about 17.00\$ (cheaper than another TI). I also happen to have one left over if anyone would like to save more money by buying a used clock driver. The difference between the two drivers are:

1. The 9904 (in the black console) uses a 48 MH (Mega Hertz) crystal while the 9904A (in the beige console) uses a 12 MH crystal.

2. The 9904 uses a 22 pF (Pico Farad) capacitor while the 9904A uses a 47 pF capacitor.

3. And finally, the 9904 uses a 0.33uH (micro Henry) coil while the 9904A uses a 3.3 uH coil.

If by some unlucky chance your TIM-9900 gets blown sky high by your soldering GUN, TV-set, or other HIGH voltage devices, simply read on for step by step instructions on how to save your TI from becoming an addition to the garbage pile.

1. Remove the TIM 9904 which is mounted in a socket (thank goodness!, few of them are). The chip is the smaller one of the two which are smothered in sticky white stuff (The 9904A does not need a heat sink and therefore you will not have to ruin its appearance with more of the heat sink paste).

2. Desolder the 48 MH crystal from the board (Warning use a soldering iron and a solder sucker). Replace the crystal with a 12 MH crystal. (What Radio Shack does not sell, Active Components will).

3. Desolder the 22pF capacitor from the board and replace it with a 47pF capacitor.

4. Desolder the 0.33 uH coil and replace it with a 3.3 uH coil.

5. Solder one end of two 0.1 uF capacitors to pin 10 of the socket (on the other solder side). Solder the other end of one of the capacitors to pin 13, and the remain end of the other capacitor to pin 20 so you end up with two capacitors in series from pin 13 to pin 20, joined at the junction to pin 10.

6. Pop in the TIM 9904A into the socket.

7. Turn on the computer and congratulate yourself on your success. NOTE: Do not take after me and make the modifications while your computer is turned on.

If by chance you are still curious as to what happened to the two computers I was attempting to fix, you will be relieved to know that I fixed mine in August and my teacher's in September after he had a chance to voice his thoughts about the shape his computer was returned in.

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