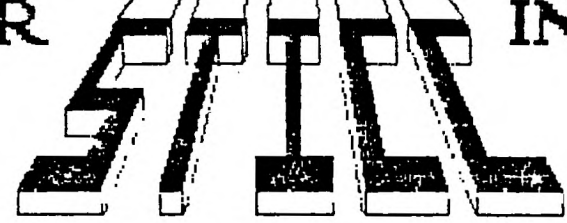


11/24/88
Saskatoon



**SASKATOON
COMPUTER
CLUB**

**TEXAS
INSTRUMENTS**



NEWSLETTER JANUARY, 1988

FROM:
P.O.Box 7925
SASKATOON
SASKATCHEWAN
CANADA
S7K 4R6

FIRST CLASS MAIL



TO:

Edmonton 99'ers
P.O.Box 11983
Edmonton, Alberta
T5J 3L1

NEWS/EDITORIAL:

* The Southern Nevada Users' Group (SNUG) is sponsoring TIXPO88 [TI-Fest-West Computer Exposition] on the weekend of February 27th and 28th, 1988, at the Palace Station Hotel and Casino, 2411 West Sahara Avenue, Las Vegas, Nevada. The Hotel/Casino is located near the junction of Interstate 15 and Sahara Avenue. The Exposition will be located on the second floor, West end, in the Round House Meeting Centre, and is tentatively scheduled to run from 9 AM until 6 PM both days. There will be FreeWare, door prizes, Users Groups, Guest Speakers, Programming Clinics, Program Demonstrations, as well as hardware and software vendors.

The Palace Station Hotel has a special room rate of \$42 per night (plus 7 % tax), single or double occupancy, including one free meal. For reservations outside of Nevada (USA only) call 800-554-2411, or in Nevada call 800-634-3101. From Canada, their regular number is 702-367-2411.

General admission tickets will be \$5 at the door with a \$1 discount for persons staying at the Palace Station Hotel.

* Mark Beck, the author of CREATIVE FILING SYSTEM, is in the process of completely rebuilding the CFS by including the best items of other databases into the CFS. He is asking for our help in two ways. Firstly, he asks all users of CFS to register with him so that they will be included on his update notification list. Secondly, he is asking for our ideas on what features we would like to see in this new CFS, keeping in mind the limitations of the TI99/4A. I'm sure he would also appreciate a fairware contribution. [I think it is great that a good programmer is remaining to support the 99/4A. Let's give him our support!]

His address is 8 Forrestridge Circle, Valdosta, GA 31602. He may be reached at 912-242-9939.

* For those considering purchasing a Horizon Ram Disk, the best Canadian supplier is Bob Boone, 25 Ottawa St., Arnprior, Ontario K7S 1W7. (613)623-7841. His prices are competitive, and he sells good merchandise. I purchased my HRD from him as a kit and have had no real hardware problems. (There is a problem of system lockup if the "firehose" connector is bumped while the system is running, but that is no fault of the Ram Disk. Just make sure everything is backed up on floppies in case that happens.)

There are two different ways that these boards can now be built. The first method was using 8K static RAM chips. The usual configuration is DS/SD, which gives you 720+ sectors in 180K. Another 64K can be added, giving you 976+ sectors in 256K. The new method uses 32K static ram chips. The minimum configuration is 256K, and is expandable to 500K or 1MEG. The exact number of sectors available depends upon which version of the HRD operating system you are using. The memory space saved by using more compact operating systems is available as extra sectors. I believe the new operating system software will allow you to partition the HRD into two or more smaller ram disks, which can be very useful with certain software.

Current prices from Bob Boone:

(1) 8K chips, DS/SD (180K), assembled, tested, guaranteed: \$ 255.00

(2) 32K chips, (256K), assembled: estimated \$ 310 - \$ 320 when ready.

Add \$5 shipping. The availability of kits and assembled units varies. You should phone before placing an order.

[Continued on back page]...

FEBRUARY 1987

A9CUG CALL NEWSLETTER

Page 9

TIWRITER OVERLAY OVERVIEW

by Tom Kennedy

How many of you have a typewriter, please raise your hand. Keep your hand up if your typewriter has interchangeable text. How about automatic bold and underline? Or some amount of memory storage (for letter heads, etc.)? How about an erase key? Those of you left have probably got a pretty expensive piece of machinery, but TI-WRITER has ten times the functions, or features of the best typewriters. With TI-WRITER, your only limitation is your own creativity.

To start off with, what will you need to operate your Word Processor? You must have the 99/4A console (TI-WRITER won't work with the 99/4), a TV or monitor, the cartridge and disk package, the disk system, memory expansion, the RS232 interface, and a printer. In other words, the whole works. The printer is something you definitely want to be careful in choosing because all of your work will be in vain if you can't print out exactly what you type in, and with an attractive appearance. First, let's look at the command line. That's the line at the top of the screen when you're in the command mode. There are seven commands shown and sixteen sub-commands that are options of the main seven. The commands are selected by typing only the letters that are capitalized in the word. For instance: "F" for Files, "SH" for Search, or "LF" for Load File. That's an interesting point: you can access any of the sub-commands from the main command menu. In other words, to ShowDirectory (which is a disk catalog) you would enter the command mode, (FCTN 9), and either type "F" for files, and "SD" for ShowDirectory, or just type "SD" immediately. This feature saves a lot of time and keystrokes.

The first command is Edit. This simply enters you into the text-edit mode in which text is created.

Next is Tabs. When you hit "T", the top part of your text is shown with a scale across the top showing the current tabs and margins. Changes are made by simply typing over existing entries with the appropriate symbol (L,R,T, or I).

"F" for files allows you to work with your text file as a whole. To Load, Save, Delete, Print, Purge, or ShowDirectory. "PF" for print file is not what you'll get when you print out through the text formatter; it just prints a "hard copy" of the whole file, just as you see it on the screen. It doesn't print with any of the modifications made by the format commands (more on those later). "PF" is useful for making a fast copy of a long letter, or whatever, in order to check for errors without having to scroll back and forth or up and down. Purge simply erases the file from memory to prepare for a new entry. It is similar to the "NEW" command in BASIC.

Next is "L" for Lines. This allows you to work with whole lines or groups of lines by moving them to somewhere else in the text, copying to somewhere else and leaving the original intact, to delete groups of lines, or to quickly move the cursor to some line in the text with the ShowLines option.

Search (or "SH") gives you the option of either the FindString routine or the ReplaceString routine. FindString will move the cursor to the first and/or each successive use of the word string you give. ReplaceString searches the text for a given string and replaces all or one occurrence with the new string. This is great for correcting a repetitive spelling error.

RecoverEdit is a failsafe repair in case the text buffer was purged in either the File or Quit command. It will pull back everything but the first line and restore the file. I guess the loss of the first line is the penalty paid for accidentally erasing a file, which can't be done very easily.

Finally, Quit, as the name implies, blows it all apart and leaves you with the title frame. But before it goes, all open files are closed (such as to disk or printer) so no data is lost. Fortunately, it first gives you the option of saving your file (in case you forgot to do that already) or just purging the file and going back to the edit mode. But if you really want to quit, you type "E" for Exit and it shuts down.

Now let's go over the keyboard. TI-WRITER makes extensive use of the FCTN and CTRL keys and uses every possible function of the top line of keys (the numbers). There are also many functions that have duplicate methods of keystrokes to activate them. For instance, to enter the command mode, you either press FCTN 9 or CTRL C. The reason for this duplication is to allow you to choose which is easiest to use depending on where your fingers are at. The problem though, is that it can be very confusing trying to remember the fifty different key combinations that activate the thirty functions. A better method is to just pick which keys you're going to use for what function and ignore the rest. What I do is use the number line keys for anything shown on the overlay strip and just memorize the few functions hidden down in the keyboard. Let's start by going down the overlay strip, left to right as shown on the next page.

The last four key functions to mention are the cursor arrows: UP, DOWN, LEFT, & RIGHT. These stay the same as in console BASIC. Now, if you're still following along you may be quite confused with this onslaught of information. The point is, you can't learn all of this in one sitting, but after using TI-WRITER for a while you start to pick things up as you need them. Rest assured, you do spend the majority of your time typing. The purpose of most of the functions I've mentioned are to manipulate the text which is already in the file. I have simply tried to cover all of this in order to bring something to your attention that you might have missed, or to peak your interest in the capability of the TI-WRITER software.

To review, in the command mode we can choose between Edit, Tabs, Files, Lines, Search, RecoverEdit, or Quit. As sub-commands of those seven, we can choose Load File, Save File, Print File, Delete File, Purge, ShowDirectory, Move Lines, Copy Lines, Delete Lines, Showlines, FindString, ReplaceString, or Exit.

```

*****
OOPS!      * CTRL 1 * This can be a real lifesaver. It recovers, or "backs up" a function
            *(CTRL Z)* that you didn't mean to hit. Like if you goofed and hit "Delete Line"
            *      * instead of "Insert Character", hit "OOPS!" and the line comes back.
Del Char   * FCTN 1 * This is the same as "DEL" in console BASIC. It deletes one character
            *(CTRL P)* under the cursor and pulls the rest of the line up to fill.
Reformat   * CTRL 2 * This is used to close up the text after using Insert Character. It
            *(CTRL R)* deletes all spaces between the cursor and the next word in the text
            *      * Then it draws all subsequent words up through the paragraph until it
            *      * encounters a Carriage Return.
Ins Char   * FCTN 2 * In Word Wrap mode (solid cursor), 32 blank characters are inserted
            *(CTRL G)* after the cursor. The bulk of the text is pushed down the line. After
            *      * insertion of new text, hit Reformat. Any remaining spaces are removed.
            *      * In the Fixed mode (hollow cursor), this operates the same as BASIC.
Screen     * CTRL 3 * This allows you to choose which of the five color combinations of
Color      *      * text/screen you prefer. The default, for no good reason, is white on
            *      * dark blue. This is hard on the eyes. I prefer to turn down the color
            *      * on my monitor and use either black on green or black on light blue.
Del Line   * FCTN 3 * Deletes the entire line that the cursor is on, including the space
            *(CTRL N)* of the line.
Next       * CTRL 4 * This advances the cursor to the beginning of the following paragraph
Paragraph  *(CTRL J)* and puts the first line at the top of the page.
Roll Down  * FCTN 4 * This is a "vertical block scroll", meaning the next 24 lines of text
            *      * of text are shown. Scans quickly down the text to get to some point.
Dupe Line  * CTRL 5 * Creates a duplicate below of the line the cursor is on. The Move/Copy
            *      * function can do the same, but this key makes it faster and easier to
            *      * create repetitive lines such as a double row of '*'s under a title.
Next       * FCTN 5 * A "horizontal block scroll". It jumps across to
Window     *      * display the next block of 40 characters, in increments of
            *      * 20. For example, the screen starts out on column one to
            *      * forty, then twenty to sixty, then forty to eighty.
Last       * CTRL 6 * The opposite of "Next Paragraph"
Paragraph  *(CTRL H)*
Roll up    * FCTN 6 * The opposite of "Roll Down"
            *(CTRL B)*
Word Tab   * CTRL 7 * This moves the cursor down the line to the first letter of each word.
            *(CTRL V)*
Tab        * FCTN 7 * Just like on a typewriter, this moves the cursor to next setting,
            *(CTRL I)* defined using the Tab function on the command line.
New        * CTRL 8 * Places Carriage Return at end of current line, then skips down to next
Paragraph  *      * line. If you have preset an auto-indent, (by using an "I" in Tabs)
            *      * then it also indents over to the proper column.
Ins Line   * FCTN 8 * Inserts a blank line above the line the cursor is on.
            *(CTRL O)*
New Page   * CTRL 9 * Inserts a blank line with a Np and Cr symbol at the beginning.
            *      * This causes the printer to feed to the next page.
Command/   * FCTN 9 * This is how to exit from the edit mode to get to the command line.
Escape     *(CTRL C)* It is also used to cancel a command already in progress.
Word Wrap  * CTRL 0 * Switches from the "Word Wrap" mode to the "Fixed" mode. In Word Wrap,
            *      * upon reaching the end of the line the cursor jumps to the next line.
*          *      * If you're in the middle of a word at the end of the line, the word you
            *      * were on moves down too. This allows you to just type continuously
            *      * without looking up to see when to hit enter. In the fixed
            *      * mode, when you reach the end of the line your letters just
            *      * pile on top of each other and you hit enter to move to the
            *      * next line.
Line       * FCTN 0 * This removes or displays the four-digit line numbers at the left side
Numbers    *      * of the screen. The numbers are used for reference when manipulating
            *      * blocks or lines of text, just like when editing a BASIC program, line
            *      * numbers are needed to refer to where changes will be made.
Quit       * FCTN - * Quit is the same as in console BASIC. Use Quit option of the Command
            *      * line to safely exit TI-WRITER.
Back Tab   * CTRL T * The same as Tab except it backs up one setting.
Beginning  * CTRL V * Moves the cursor to the beginning of the line you're on.
of Line   *      *
Del.End    * CTRL K * This is just like Delete Character (FCTN 1), except it takes out
of Line    *      * everything to the right of the cursor.
Home       * CTRL L * Moves the cursor to row 1, column 1, on the screen only. Unfortunately
Cursor     *      * it doesn't move to first line of text, which would be more convenient
            *      * when at the end of a long document and want to jump to the top. [For
            *      * that, enter S, then enter I.]
Left Mrgn  * CTRL Y * Allows you to temporarily back-arrow beyond the left margin when it
Release    *      * has been set past zero.
*****
    
```

the cursor to the beginning of the blank line. If Automatic Paragraph Indentation is set, the cursor is returned to the indentation point.
FIXED: Does not function.

***Next Paragraph - CTRL 4 or CTRL J** - Moves the cursor to the beginning of the following paragraph.

Next Window - FCTN 5 - Horizontal Block Scroll. Displays the next of the three overlapping windows of the full 80-column screen width - 1, 2, 3, 1, 2, etc.

OOPS! - CTRL 1 or CTRL Z - Recovers text deleted by Delete Character, Delete Line, Delete End of Line, Duplicate Line, typing over or blanking out. Removes characters typed on a blank line.

Quit - FCTN = - In the TEXT EDITOR, Quit enters Command Mode. From the main menu, it returns to the master title screen.

***Reformat - CTRL 2 or CTRL R** -

WORD WRAP: Recloses text after an insertion and fills text to incorporate deletions and insertions. Reformat stops when a Carriage Return is encountered.

FIXED: Terminates Insert Character.

Right Arrow - FCTN D or CTRL D - Moves the cursor to the right without blanking out text.

Roll Down - FCTN 4 or CTRL A - Vertical Block Scroll. Displays the 24 lines that follow the last line on the screen.

Roll Up - FCTN 6 or CTRL B - Vertical Block Scroll. Displays the 24 lines that precede the first line on the screen.

Screen Color - CTRL 3 - Displays the next screen background/character color combination in a sequence of five.

Tab - FCTN 7 or CTRL I - Moves the cursor to the next tab setting to the right.

Up Arrow - FCTN E or CTRL E - Moves the cursor up. If the cursor is on the top line, previous lines scroll onto the screen one at a time.

Word Tab - CTRL 7 or CTRL W - Moves the cursor to the first character of the next word.

Word Wrap - CTRL 0 (Zero) - Switches from Word Wrap Mode (solid cursor) to Fixed Mode (hollow cursor), and from Fixed Mode back to Word Wrap Mode.

* Function altered in Fixed Mode.

+ Text can be recovered by OOPS!.

1. Type **M** for Move.
2. Press **ENTER**.
3. Type the line number of the first line to be moved, a space, the line number of the last line to be moved, a space, and the line number of the line after which the moved text is to be inserted.
4. Press **ENTER**.

PrintF Prints the contents of the text buffer.

1. Type **PF** for PrintF.
2. Press **ENTER**.
3. Type the devicename of your printer.
4. Press **ENTER**.

TO STOP/CANCEL PRINTING - Press **FCTN 4**.

Purge Clears the text buffer. (The contents of the text buffer may be recovered by RecoverEdit.)

1. Type **P** for Purge.
2. Press **ENTER**.
3. Type **Y** for Yes or **N** for No.
4. Press **ENTER**.

Quit Save a file, Purge a file, or Exit the Text Editor.

1. Type **Q** for Quit.
2. Press **ENTER**.
3. Type ONE of the following letters:
S for SaveF (See SaveF).
P for Purge (See Purge).
E for Exit to exit the Text Editor and return to the main menu.
4. Press **ENTER**.

RecoverEdit May recover all but the first line of the contents of the text buffer after purging. (See page 88 for conditions affecting recovery.)

1. Type **RE** for RecoverEdit.
2. Press **ENTER**.
3. Type **Y** for Yes or **N** for No.
4. Press **ENTER**.

ReplaceString Replaces a word or words with another word or words in the text buffer.

1. Type **RS** for ReplaceString.
2. Press **ENTER**.
3. Type a slash (/), the string to be replaced, a slash, the string that is to replace it, and a slash.
4. Press **ENTER**.
5. Options:
A = All - replace the string in every subsequent instance.
Y = Yes - replace the string in this instance; find the next instance.

N = No - do not replace the string in this instance; find the next instance.

S = Stop - escape the command with the cursor on the last instance found.

6. When replacement is complete, return to Edit Mode is automatic

SaveF (Whole File) Saves the contents of the text buffer including the Tabs settings to a file on diskette.

1. Type SF for SaveF.
2. Press ENTER.
3. Type any valid filename.
4. Press ENTER.

SaveF (Part of a File) Saves part of the contents of the text buffer to a file on diskette. (Tabs settings are saved if the part contains the last line of the text buffer contents.)

1. Type SF for SaveF.
2. Press ENTER.
3. Type the line number of the first line of the part to save, a space, the line number of the last line of the part to save, a space, and any valid filename.
4. Press ENTER.

Show Locates a line in the text buffer by line number and displays it as the top line on the screen. (Zero can equal line 0001, E can equal the last line of the file.)

1. Type S for Show.
2. Press ENTER.
3. Type the line number of the line to be shown.
4. Press ENTER.

ShowDirectory Catalogs a diskette on the screen.

1. Type SD for ShowDirectory.
2. Press ENTER.
3. Type the number of the disk drive that contains the diskette to be cataloged.
4. Press ENTER.
5. To cancel the catalog display, press ENTER again.

Tabs Sets margins, tabs and paragraph indentation for the text buffer.

1. Type T for Tabs.
2. Press ENTER.
3. Beneath the appropriate column number, type:
 L for Left margin.
 I for paragraph Indent.
 T for Tab.
 R for Right margin.
4. Blank out any undesired settings.
5. Press ENTER.

.NF **No Fill** - Default condition. Prints lines as they appear in the file. All of the Left Margin and Indent commands that follow a No Fill command are ignored.

@ **Overstrike** - Causes the printer to overstrike subsequent characters until a space is encountered.

.PA n **Page Number Reset** - Resets the consecutive page number in Header and/or Footer commands to "n." Absolute or relative values may be used.

.PL n **Page Length** - Sets the number of lines per page to "n." The default is 66 lines per page.

.RM n **Right Margin** - Sets the right margin at column "n." Absolute or relative values may be used.

^ **Required Space** - Joins words for the purposes of filling, adjusting, underlining and overstriking.

.SP n **Space** - Causes the printer to skip "n" lines before printing the next line. The command .SP skips one line.

& **Underscore** - Causes the printer to underscore subsequent characters until a space is encountered.

ASCII CHARACTER CODES

32	(space)
33	! (exclamation point)
34	" (quote)
35	# (number/pound sign)
36	\$ (dollar sign)
37	% (percent)
38	& (ampersand)
39	' (apostrophe)
40	((open parenthesis)
41) (close parenthesis)
42	* (asterisk)
43	+ (plus sign)
44	, (comma)
45	- (minus sign)
46	. (period)
47	/ (slant, slash)
48	0 (zero)
49	1
50	2
51	3
52	4
53	5
54	6
55	7
56	8
57	9
58	: (colon)

The following article is submitted by Steve Zabarylo, a STICC member. (This is a revised version of the article in the September, 1987 newsletter.)

ADD 32K AND GROMs to CONSOLE

Here finally are the few words I promised about the "hacking" I did to Darryl's console. You may recall the 32k that I installed in the CorComp stand-alone RS232 box. This is what Darryl was using for his system but with the stand alone controller and a disk drive his limited desk space was all but used up. So, my first objective was to give Darryl as much desk space as possible. Placing the 32K memory in the console or speech synthesizer would eliminate the box at the end of the daisy chain. Also, this would reduce the parts count on the desk and eliminate one connector and its attendant problems. My second objective was to reduce the wear and tear on the grom port. If two of the 3 modules that Darryl uses could be put in the console, module swapping could be all but eliminated. As this console has already been modified with a remote keyboard, its desk placement would be made very flexible by not requiring frequent access to the grom port to change modules.

My third objective was to perform the modifications with the least amount of tampering with the mother board. The final plan was to include 32k of 6264 Cmos RAM, one Editor/assembler GROM and 2 Disk Manager GROMs inside the console with a switch to select between the internal GROMs and the module port. The switch, a 2 pole, 3 position non shorting type would be supplemented with a momentary contact switch to be used as a reset switch.

Placing the RAM in the console would take advantage of the address decoding available on the main board. If I had chosen to place the extra RAM in the speech synthesizer two more chips would be required.

Since the power and most of the signals required for the 32k additional RAM are available at the grom port, the right angle connector was, the obvious place to make the bulk of the connections. Some changes were made to the traces on this connector (described later) to enable installing the grom selector switch.

As the console GROMs 0, 1 and 2 are socketted, it was a simple matter to install the EA and DM GROMs "on board". Two of the GROMs were piggybacked and reinstalled. The third GROM had the EA chip on its back and that pair placed in the second socket. The third socket was used for the pair of DM GROMs. With the exception of pin 14 of the added GROMs all pins of the piggybacked pairs were soldered together. One pole from the switch provides -5v selectively to either the EA GROM, DM GROMs, or the module port. The second pole of the switch disables one other signal on the module port to ensure any installed command modules to not interfere with the EA or DM GROMs when they are selected.

Five signals not available on the GROM port are taken from U504 and U508 on the main board. Having a good soldering station at my disposal, I chose to remove those chips and install sockets. The required connections to these chips were much easier to make. Should it be required, transferring this complete modification to another console could be accomplished with just a screwdriver.

The completed console works great. With some joggling of components Darryl now has a bit of elbow room on his desk and I'm already working on an "edge-on" stand to free up even more space.

Note: every caution and waiver you have ever seen in a construction article applies.

ADD 32K AND GROMs to CONSOLE

General Notes on soldering

- clean surfaces to be soldered then keep your fingers off them.
- use a good liquid flux to aid in quick solder flow.
- no solder guns or woodburners, use a decent soldering tool or forget it. 25 watt wood burners don't have enough heat to allow a quick connection and leave the gun for working on the evestroughing.
- finish every job with a good flux cleaner/remover.
- the little brushes they sell for applying solvent cement to ABS pipe with the bristles cut to about 1/4 inch length gets the best out of your flux remover.

General Disassembly Notes

With the RF shield removed, locate the area on the underside of the top section that is immediately over the console GROM chips. A length of masking or electrical tape placed here now will eliminate the possibility of shorting the connections made to the GROMs when the shield is reinstalled. Do it now so you won't forget. If you short the -5v to ground on the shield your cool running replacement power supply will be the next addition to your junk parts box.

GROM Chips

Remove console GROM chips U500, 501 and 502 noting the location of pin 1 as identified by the notches at the end of the chips. Any two of these chips will be piggybacked and all leads soldered together where they overlap pin 1 to pin 1 etc. (refer to general notes on soldering). Soldering pin 1 of the upper chip to pin 9 of the lower chip will give you an excuse to practice all your favourite expletives.

Pin 14 of the EA GROM is straightened and shortened then the EA GROM is piggybacked on the remaining console GROM and soldered. About 10 to 12 inches of fine gauge wire is now soldered to pin 14 of the EA GROM.

Next, the two GROMs from the Disk Manager module must have pin 14 straightened and shortened. Solder these chips together as above with either one on top. A 10 to 12 inch length of fine gauge wire is soldered to pin 14 of both GROMs. Reinstall the GROM pairs in the three sockets observing correct polarity.

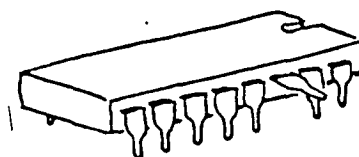
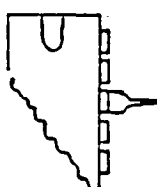
Stacking GROMs two deep is the limit to fit inside the RF shield. If you stack them three or more deep, a hole must be cut in the shield to provide clearance. I have no idea how many GROMs can be added in this way and still work. I have one multiple module with seven GROMs in it from my first hardware project that works well. The other limiting factor is finding a two pole switch with sufficient positions.



BEFORE

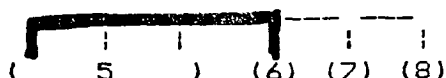
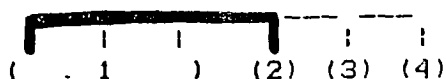


AFTER



GROM

ADD 32K AND GROMs to CONSOLE

TWO POLE TRIPLE POSITION SWITCH
(GROM SELECT SWITCH)

- 1 - 29*1 ON PORT CONNECTOR
- 2 - 29 ON PORT CONNECTOR
- 3 - D/M GROMs
- 4 - E/A GROM
- 5 - 34*3 on port connector
- 6 - 34 on port connector
- 7 * 8 - no connection

MOMENTARY CONTACT SWITCH
(RESET SWITCH)

- 1 - 29*1 on port connector
- 2 - 1*1 on port connector

The four wires connected to U504 are now soldered to pin 20 of each of the four ram chips in no particular order, the line from U508 is connected to pin 22 of the stack of RAM chips, and lastly the two lines from the added GROMs to the 2 pole switch.

Reassembly

Now it's time to get all the pieces back together. Mount the stack of ram chips upsidedown on the top RF shield towards the centre using double sided tape or glue. Install the right angled GROM port connector and dress the wires from the back of the connector so that it can pass freely through the opening in the top of the case that holds it in position. With the switches installed, replace the main board in the case then the keyboard and power supply. Recheck the switches for clearance from the RF shield to ensure that nothing gets shorted in reassembly.

Operation

Everything was double checked along the way so we have no worries about creating smoke when the power switch goes on, Right!. If the color bars do not come up in the usual time, power down and go back and check things again. Chips installed backwards? Wires disconnected during reassembly?

If the bars come up, try the reset switch. The bars should reappear when it is released. Next press any key to get the option list. Do this for each position of the GROM switch pressing the reset each time the switch is changed. Disk Manager, should appear with the switch in one position and Editor Assembler should appear in another. The third position should cause only TI Basic to appear as an option when no cartridge is installed. With the switch in this position, install the Extended Basic cartridge and hit reset. Hit any key then select Extended Basic from the menu. At the *READY* prompt, type SIZE then <enter>.

CDC

BR8B1A/9409
CDC-9429

Mitsubishi

M4851/501

44-38861-504

M2896-63

M353

MPI

MPI-51

MP1-52

MPL-502

National

JA-551

Panasonic

JU-455

JU-350

Shugart

SA-455

SA-480

SA-800

SA-850

SA-860

Tandon

TM50-1

TM50-2

T-1554

TM100-

TM100-

TMO-18

TH343

Tosc

T-000-55

Teac-S!

WST

FDD-100-5

FDD-200-5

FDD-111-5

FDD-121-5

WDD

FDO-100-11

FDD-200-11

1. With 80 Track Software
2. With 8" or High Density Controller and Software
3. Mounted Externally
4. H-17 Controller w/Software Patch, H-37 Controller
5. Magnolia Controller
6. Factory Installed Drive
7. As 80 Trk. 5¼" or as 8" Emulator w/Adapter Cable
8. With Double Sided Mod
9. With Some Operating Systems
10. Only as 8" Emulator w/Adapter cable
11. Only as 80 Track Drive
12. With Add-On Controller
13. Cannot Mix Single & Double Sided Drives

COURTESY:

CIN-DAY 99 USER GROUP
CINCINNATI-DAYTON

ADD 32K AND GROMs to CONSOLE

Main Board Mods

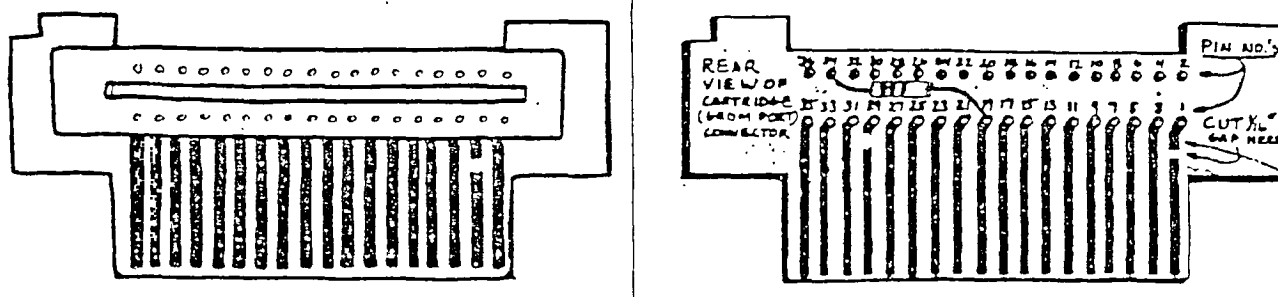
Five connections are required to U504(74LS138) and U508(74LS04) to obtain address decoding for the memory chips being added. Connect 8 to 16 inch lengths of fine gauge wire to pin 7, 9, 10, and 14 of U504 and pin 9 or 10 of U508. If these chips are removed and sockets installed, then pins 9 and 10 of U508 must be connected together. Identify the other ends of the wires for later connection to the RAM chip stack, and reinstall the chips if you have removed them to make the connections.

Now is a good time to replenish the silicon heat transfer compound on the top of the 9918 VDP chip and the 9904 if your board has a heat sink for that one. As an alternative to the TMS9918 you may wish to substitute a TMS9928 chip to obtain color difference signals to drive a converter for RGB or RGBI monitors. This chip is also an improvement for those using a black and white TV or a monochrome monitor, providing a sharper picture from the luminance signal. No other changes to the main board are required in this instance, just a straight swap of chips. To use the colour difference signals, a converter is required to change the PAL output to RGB, RGBI, or composite video.

Reinstall the RF shield on the main board with the wires from U504, U508, and the GROMs passing through the hole for the GROM port connector.

Port connector changes

This part consists of a card edge connector and a small PC board. Refer to the front and back views of the PCB for the location of the traces that must be cut (lines 1, 29 and 34). The resistor (51k ohm) is connected between lines 19 and 34 on the back of the connector.



RAM chip assembly

The memory chips are very sensitive to static so exercise great care in their handling. The first step is to check that the pins make good contact when the chips are stacked on top of one another. Next pin 22 of each of the 4 chips is straightened. Carefully stack the chips, keeping the pins in correct alignment, and solder all pins together where they overlap. Take your time so the assembly isn't overheated. A 22uF capacitor is connected between pins 14 and 28 on the bottom of the stack with the negative lead to pin 14.

Before proceeding any further with the wiring, decide on the location of the two switches (that won't interfere with anything else inside the console) and drill the mounting holes in the case.

ADD 32K AND GROMs to CONSOLE

Wiring the parts together

Wire together the memory chips and the two switches to the modified GROM port connector using 6 to 8 inch lengths of fine gauge wire, where possible. attaching to the pins that extend through the back of the PCI on the connector. Use the chart below to complete this stage.

CONNECTOR BACKSIDE	MEMORY CHIPS	SIGNAL	OTHER CONNECTIONS
1		RESET	
1 *1			RESET SWITCH
2	14	GROUND	
3	19	D7	
4		-CRU CLK	
5	18	D6	
6		CRUIN	
7	17	D5	
8	10	A15	
9	16	D4	
10	8	A13	
11	15	D3	
12	7	A12	
13	13	D2	
14	9	A11	
15	12	D1	
16	5	A10	
17	11	D0	
18	4	A9	
19	28/26	+5V	*2
20	3	A8	
21		-GS	
22	25	A7	
23	9	A14	
24	2	A3	
25		DBIN	
26	24	A6	
27		GR CLK	
28	21	A5	
29		-5V	2 POLE SWITCH (2)
29 *1			RESET SWITCH (1)
29 *1			2 POLE SWITCH (1)
30	23	A4	
31		G RDY	
32	27	-WE	
33		VSS	
34		-ROM G	2 POLE SWITCH (6)
34 *3			2 POLE SWITCH (5)
35		GROUND	
36		GROUND	

*1 connect below break in card edge trace
(on back of connector)

*2 connect to 28 with a short jumper to 26

*3 connect below break in card edge trace
(on front of connector)

without using the Fill Command. If Fill and Adjust are both used, and Fill is turned off with No Fill, Adjust is also turned off.

n **Alternate Input** - Used with the Mailing List option to position up to 99 variables that can be assigned values from the screen or from a value file called by a Mailing List command. (Mail Merge Option)

.BP **Begin Page** - Forces a page break. The printer begins subsequent text on a new page.

.CE n **Center** - Centers the next "n" lines. The command .CE centers the next line only.

.CO t **Comment** - Puts a comment "t" in text that is not printed with the document by the Text Formatter.

.DP n:t **Define Prompt** - Defines a prompt "t" for Alternate Input "n" to cue definition from the screen. (Mail Merge Option)

.FI **Fill** - Puts as many words on the line as fit without exceeding the right margin.

.FO t **Footer** - Puts "t" (text) as the footer on each page. If % is used in the footer text, it is replaced with the appropriate consecutive page number.

.HE t **Header** - Puts "t" (text) as the header on each page. If % is used in the header text, it is replaced with the appropriate consecutive page number.

.IF f **Include File** - Calls filename "f" at that point. Does not permit nesting. Files can be called by disk drive number or by diskette name.

.IN n **Indent** - Indent the first line of a paragraph "n" spaces. Absolute value indents to the column number "n" regardless of the left margin. Relative values: "+" n" is added to the left margin value; "- n" is subtracted from the left margin value to "outdent" to the left of a left margin. Each time the Left Margin is reset, the Indent command must be reset also.

.LM n **Left Margin** - Set the left margin at column "n". Absolute or relative values can be used.

.LS n **Line Space** - Causes the printer to skip "n" lines before printing each line. The default is single line spacing.

.ML f **Mailing List** - Calls value file "f" from the main file to assign values to variables defined by Alternate Input commands. (Mail Merge Option)

.NA **No Adjust** - Default. Turns off the Adjust command.

60	<	(less than)	109	m	capitals; print
61	=	(equals)	110	n	as lower-case
62	>	(greater than)	111	o	letters.
63	?	(question mark)	112	p	
64	@	(at sign)	113	q	
65	A		114	r	
66	B		115	s	
67	C		116	t	
68	D		117	u	
69	E		118	v	
70	F		119	w	
71	G		120	x	
72	H		121	y	
73	I		122	z	
74	J		123	{	(left brace)
75	K		124		(vertical bar)
76	L		125	}	(right brace)
77	M		126	~	(tilde)
78	N		127	DEL	(appears on screen as a blank)
79	O				
80	P				
81	Q				
82	R				
83	S				
84	T				
85	U				
86	V				
87	W				
88	X				
89	Y				
90	Z				
91	[(left bracket)			
92	\	(reverse slant)			
93]	(right bracket)			
94	^	(circumflex)			
95	—	(underline)			
96	,	(accent grave)			
97	a				
98	b				
99	c				
100	d				
101	e				
102	f				
103	g				
104	h				
105	i				
106	j				
107	k	Appear on the			

TEXT EDITOR - COMMANDS IN COMMAND MODE

TEXT EDITOR - EDITING OPERATIONS

Back Tab - CTRL T - Moves the cursor one tab setting to the left.

Beginning of Line - CTRL V - Moves the cursor to the beginning of the line on which it is located.

Command/Escape - FCTN 9 or CTRL C - Exits from Edit Mode into Command Mode. Escapes a command.

+ Delete Character - FCTN 1 or CTRL F - Deletes character by character including the space.

+ Delete End of Line - CTRL K - Deletes all text to the right of the cursor to the end of the line, including the character under the cursor.

+ Delete Line - FCTN 3 or CTRL N - Deletes the entire line of text and the line space.

Display Line Numbers - FCTN 0 (Zero) - Removes or redisplay line numbers on the screen.

Down Arrow - FCTN X or CTRL X - Moves the cursor down. If the cursor is on the last line of the screen, subsequent lines scroll onto the screen one at a time.

+ Duplicate Line - CTRL 5 - Duplicates the line above and replaces the line the cursor is on with the duplicated line.

Home Cursor - CTRL L - Repositions the cursor at the upper left corner of the screen without altering the display.

***Insert Blank Line** - FCTN 2 or CTRL G -
WORD WRAP: Splits a line into two lines for insertion. Terminated by Reformat.
FIXED: Pushes the remainder of the line to the right during insertion. Text pushed past the right margin is deleted.

***Last Paragraph** - CTRL 6 or CTRL H - Moves the cursor to the beginning of the preceding paragraph in the text.

Left Arrow - FCTN S or CTRL S - Moves the cursor to the left without blanking out text.

Left Margin Release - CTRL Y - Temporarily disables the left margin until the cursor recrosses the left margin.

New Page - CTRL 9 or CTRL P - Inserts a blank line with a Page symbol and Carriage Return symbol. Causes the printer to begin a new page in both Editor and Formatter.

Edit Exits Command Mode and returns to Edit Mode.

1. Type E for Edit.
2. Press ENTER.

FindString Locates a word or phrase in the text buffer.

1. Type FS and press ENTER.
2. Type /s/ where "s" is the word or phrase to be found.
3. Press ENTER.

LoadF (Whole file) Loads a file from a diskette into the text buffer.

1. Type LF for Load F.
2. Press ENTER.
3. Type any valid filename.
4. Press ENTER.

LoadF (Part of a file) Loads part of a file from diskette into the text buffer.

1. Type LF for LoadF.
2. Press ENTER.
3. Type the line number of the first line to be loaded, a space, the line number of the last line to be loaded, a space, and the filename of the file to be loaded.
4. Press ENTER.

LoadF (Merge whole file) Merges a file on diskette with the contents of the text buffer.

1. Type LF for LoadF.
2. Press ENTER.
3. Type the line number of the line in the text buffer after which the file is to be merged, a space, and the filename of the file to be merged.
4. Press ENTER.

LoadF (Merge part of file) Merges part of a file on diskette with the contents of the text buffer.

1. Type LF for LoadF.
2. Press ENTER.
3. Type the line number of the line in the text buffer after which the file is to be merged, a space, the line number of the first line of the file to be merged, a space, and the line number of the last line of the file to be merged.
4. Space once and type the filename of the file to be merged.
5. Press ENTER.

TIWRITER FORMATTER OVERVIEW

by Tom Kennedy

Now I want to cover the Text Formatter, which prints out the document. Most importantly, the special symbols, called Format Commands, that the formatter uses to alter the print-out of the document, which are installed in the Text Editor.

In other words, you put these commands into the text when you write it and as the formatter comes across them it changes the text accordingly but doesn't actually print the symbols.

There are six groups of formatter commands that are all applied in a similar manner. All commands must be in caps and must be on a line that starts with a period.

The use of these commands in your text is what separates the word processor from a typewriter. They allow you to get the most out of your printer.

So, now you've written your document, and inserted all the format commands, now how do you print it out? First, save the document and exit the Text Editor. At the title menu, select Text formatter, (make sure the program disk is in the drive) and the screen will blank with the prompt "ENTER INPUT FILENAME". Enter the name of the file you just saved, (ex. DSK1.MYFILE) and hit enter.

Next, the prompt "ENTER PRINT DEVICENAME" appears after the file is loaded. If you use a serial printer, the device name would be RS232.BA-xxx with xxx being the baud rate. If you're using a parallel printer, the device name is PIO. Also, you must add either .CR or .LF to the end of the device name. This tells TI-Writer whether your printer will handle the carriage return or the line feed. Check your printer manual and the TI-Writer manual in detail to find out which you use.

The next prompt is "USE MAILING LIST". If you aren't printing "form letters" just hit enter to accept the default of N (NO).

Next is "WHAT PAGE(S)? <ALL>". If you want to print the whole document, accept the default for all pages. Otherwise, you can print any of the pages or groups of pages.

The prompt "NUMBER OF COPIES: 1" tells how many copies of each page are to be printed.

The last prompt is "PAUSE AT END OF PAGE? N". The main purpose of this function is if you are using separate sheets of paper it will stop and wait for you to align the next sheet.

Now, about the Mailing List Option. Let's say you've written a form letter to send out to various individuals, maybe a resume'. You write the letter like normal, but when you come to a name or address or something that will change with each letter, you put in its place a variable in the form of *n*, where n is a number to identify the order. So instead of starting off with: "Dear Mr. Smith" you would have "Dear Mr. *1*" and so on. when you're all through with your letter, save it and purge the memory. Now you must create what is called a Value File, which is your mailing list where TI-Writer will draw the variables from. A value file consists of a list values to be inserted into the letter, listed one to a line, preceded by the number of the variable and ending with a carriage return symbol. Groups of values must be separated by a line with just an asterisk and a carriage return. For example:

```
1 John Smith
2 123 STREET
3 Seattle, WA
*
1 Jane Doe
2 456 STREET
3 Seattle, WA
```

At the top of your letter you insert the .ML f command where f equals the filename of your value file. After selecting the mailing list option the computer will use this command to fill in the variables. If there is no .ML command in the letter then when you are prompted for "MAILING LIST NAME:" you supply the filename. This allows you to call on a number of files for different groups.

Text Dimension commands, as the name implies, move or shape the words in the document (margins, linespacing, right justify, etc.)

.FI : FILL : PUTS AS MANY WORDS ON A LINE AS WILL FIT.
.NF : NO FILL : CANCELS FILL.
.AD : ADJUST : ALIGNS THE TEXT TO THE LEFT AND RIGHT MARGINS. (RT. JUSTIFY)
.NA : NO ADJUST: CANCELS ADJUST.
.LM n : LF MARGIN: SETS LEFT MARGIN TO "n".
.RM n : RT MARGIN: SETS RIGHT MARGIN TO "n".
.IN n : INDENT : CREATES AN AUTO-INDENT FROM LEFT MARGIN.
.LS n : LINE SP : SETS LINE SPACING TO "n" LINES.
.PL n : PG LENGTH: DEFINES NUMBER OF LINES TO A PAGE.
.BP : BEGIN PG : DEFINES FIRST LINE OF NEW PAGE.

Internal Format commands control the spacing of characters on a line.

.SP n : SPACE : SIMILAR TO THE TAB FUNCTION.
.CE n : CENTER : CENTERS NEXT "n" LINES BETWEEN MARGINS.

Highlighting commands control functions such as underline or bold and allow you to redefine characters to use them to send CTRL codes to the printer.

: REQUIRED : JOINS WORDS TOGETHER WHEN REQUIRED TO PREVENT SPLITTING IN
: SPACE : REFORMATING, UNDERLINE, ETC.
& : UNDERLINE: (UNDERSCORE) UNDERLINES ALL TEXT FOLLOWING UNTIL NEXT PAGE.
@ : BOLD : (OVERSTRIKE) RETYPES FOLLOWING TEXT FOUR TIMES.
.TL xx: TRANS- : ALLOWS REASSIGNMENT OF ONE CHARACTER TO REPRESENT A NUMBER.
: LITERATE : OF CHARACTER VALUES TO SEND CODES TO THE PRINTER.
.CO t : COMMENT : SIMILAR TO REM IN BASIC--ALLOWS NOTES THAT DONT PRINT.

Page identification commands print notes in the upper or lower corner of each page, either headers or footers.

.HE t : HEADER : PRINTS TEXT (t) AND PAGE NUMBER AT TOP OF EACH PAGE.
.FO t : FOOTER : PRINTS TEXT (t) AND PAGE NUMBER AT BOTTOM OF EACH PAGE.
.PA : PAGE # : RESETS PAGE NUMBER IN .HE AND .FO

File management commands

.IF f : INCLUDE : MERGES A FILE TO PRINT A DOCUMENT TOO LARGE FOR ONE FILE.
: FILE :

Mail Merge option commands are used to supply values to the variables in a letter that has been set up for the mail merge option

.ML f :MAIL LIST: IDENTIFIES VALUE FILE (f) FOR MAIL LIST.
n :VARIABLE : INSERTED IN TEXT AS VARIABLE FOR ASSIGNMENT FROM VALUE FILE.
.DP n:t:DISPLAY : PROMPTS YOU USING TEXT "t" TO ASSIGN TO VARIABLE (*n*).
: PROMPT :

Another way to insert values is to use the Define Prompt command. With this command you do not insert a .ML comand calling a value file and instead you insert lines containing the format: .DP n:t - where n is the number of the variable and t is the prompt text. Now, when you come to the prompt "USE MAILING LIST?" you select "N" for NO and as the document is printed when a variable is encountered the printing stops and the text you chose appears on the screen asking you for the appropriate-value. If you don't include a ".DP n:t" command in your text, the computer responds with "ENTER DATA FOR VARIABLE *n*" and it can get confusing trying to remember which item you're on. This method is handy for letters which you only want to print one copy at different times to different people.

Let me tell you, this is why I bought a computer. I'm sure we all went through that period of time before buying a computer when we would ask: "what am I going to use a computer for, anyway?". Well I decided there were two things I wanted to do: 1) Store files of data (recipes, albums, etc.) and 2) Use my computer as a typewriter. I didn't know about TI-WRITER when I bought the 99/4A, but now I know that I made the best choice possible. I hope you will all find TI-WRITER as easy to use and as powerful as I have.

NEWS/EDITORIAL. continued:

* I don't know anything about this company, but CANARIA DATA INC. have informed us that they are dedicated to support the TI99/4A and Geneve 9640. Available now are the Geneve 9640 with enhanced keyboard, keyboard overlays for the Geneve 9640, and TI Writer packages. They expect to sell two types of peripheral support boxes in the Spring of 1988. The larger case will support 5 cards (TI99 or Geneve) + 3 drives + 1 hard drive. The smaller box will support 4 cards (TI99 or Geneve) + 2 drives + 1 hard drive. As soon as they get the newly designed Myarc HardDisk/Floppy Controller, they will have them available.

Their address is 264 Weber St.W., Kitchener, Ontario, N2H 4A6. Tel: (519)5783873.

* While on the topic of the Geneve 9640, some purchasers of the early computers that opted for the standard keyboard had many problems, largely due to some defective keyboards (that were not made by Myarc, but supplied by them.) When the standard keyboards were replaced with the enhanced keyboards, the problems disappeared. Of course, they still had to contend with software problems, such as an incomplete operating system with many bugs. I understand most of these bugs are being worked out, and much better operating systems are being made available on an ongoing basis. If you buy a Geneve, I suggest you buy it from someone who will provide follow-up service, such as software updates.

* Great Lakes Software sent us a brochure a while back. They sell programs such as Certificate'99, Joy Paint'99, Clip Art, Extended Business Graphs, and Banner'99. They also sell the Geneve 9640. Ask for details, or write to them at 804 E.Grand River Avenue, Howell, Michigan 48843.

* We also received a catalog from Asgard Software, P.O.Box 10306, Rockville,MD 20850. They sell things like Font Writer II, GRAPHX Companions, Artist Instances, and a variety of other items.

* A while back, many of you filled out survey forms that were being compiled by Ali Ulgen, 952 E Parkhaven Dr., Seven Hills, OH 44131-3918 TEL: (216)741-4951. The results are in, and the report will be available at our next meeting (in both diskette and hard copy form.)

* As I am sure you have noticed by now, this newsletter is formatted in "Take-Apart" style. Each sheet of paper is restricted to one article or type of article/reprint. This way, you can file the general information/editorial page in one place, hardware articles in another place, and so on. Over the years we have collected a number of newsletters from various users groups. But just try and FIND a particular article that's buried in there somewhere! It could take days, if they are not cross referenced, or filed by some criterion. If you have some sort of filing system, please split this newsletter up and file it appropriately.

* Just another reminder to STICC members. Feel free to submit any software reviews, opinions, problems, requests, jokes, or whatever to the newsletter editor, so we can publish a regular newsletter. The last few months have seen only handouts at the meetings, partly because I was busy with other things, but mostly because there are very few articles or whatever submitted. Done any interesting graphics/artwork?

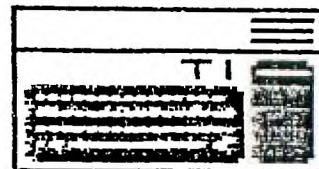
Till next time, PRESS ANY KEY TO CONTINUE.

John Thomson, Editor

HERE IS A SAMPLE OF AN EXTENDED BASIC PROGRAM CALLED "SIDEWAYS". WHEN THE PROGRAM IS RUN, IT PROMPTS FOR THE NAME OF A DISPLAY/VARIABLED TEXT FILE. THEN, AFTER A FEW SECONDS OF PROCESSING, IT BEGINS PRINTING SIDEWAYS, LIKE SDI. NEXT TIME PROGRAM DOES NOT LIKE CARRIAGE RETURNS. ALSO IT WORKS BETTER IF

SASKATOON
TEXAS INSTRUMENTS
COMPUTER CLUB

JANUARY, 1988



We discuss and review new products for the TI99/4A while providing technical support for any problems that a member may have. We also support a software library and have regular contacts with other groups in Canada and the United States. Our membership fees are very reasonable 10.00/single or 12.00/family. If you would like to become a member, or require more information, contact any member of the executive.

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We are a small, nonprofit club here in Saskatoon. We never have, or ever will, consider our newsletter a professional medium in its field. Therefore, with this consideration, the views presented in the articles, by various authors, may not be the views of the newsletter committee, the STICC executive, or its members. On this basis, this club cannot be held responsible for errors, omissions, views, or copy infringements, as presented in the articles.

MEETINGS:

General meetings are normally held at 7 PM on the first monday of each month at Kelsey Institute, Idylwyld Drive at 33rd Street, in room 132. There is free plug-in parking behind Kelsey in the student parking stalls if entering from this parking lot, use door #10, otherwise the front door closest to Idylwyld and 33rd can be used.

MEETING
DATES :

FEB. 1
MARCH 7
APRIL 4