

Saskatoon  
Nov 86



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SASKATOON TEXAS INSTRUMENTS COMPUTER CLUB

NEWSLETTER

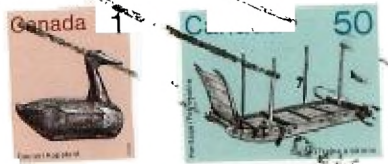
OCTOBER, 1986

NOVEMBER

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NOV 1986 FIRST CLASS MAIL  
7925 210

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SASKATOON TEXAS INSTRUMENTS COMPUTER CLUB

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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MEETINGS

General meetings are normally held at 7 PM on the first Monday of each month at the Saskatoon Region Community College, 145-1st Avenue North. If the first Monday of the month is a holiday (civic or statutory), the meeting will be held on the following Monday. The meeting room number will be posted on a sign at the main entrance. (Usually room 144)

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\* REMAINING MEETINGS IN 1986: November 3 \*  
\* December 1 \*  
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EDITORIAL

Sorry for the lack of an October newsletter; there didn't seem to be much news to report and I had no submissions.

News from the rumor mill: Craig Miller, of Miller's Graphics, recently announced (unofficially) plans for a new, already-designed, TI co-processor peripheral box to be made by an unnamed manufacturer. [CorComp??]

This unit will have the 8088 microprocessor and will therefore run MS-DOS (IBM) software. There will be expansion slots for all types of IBM-compatible boards. It will have 256K RAM, expandable to 640K, and later expandable to 3 Megabytes. An IBM-type keyboard will be optional.

How this unit will interface to the TI99/4A is a closely guarded secret. It will support existing TI hardware, yet the TI PE Box is not essential. It appears to be an IBM compatible computer with the capability of interfacing to the TI or being used as a separate system. The details are not expected for a few months; an official announcement will be made when the unit has been manufactured and ready for sale. That could happen in early 1987. The price is unknown, but is said to be "affordable".

Chicago UG's fourth annual TI Faire was held November 1st, so we may be hearing some news from there soon.

For those of you interested in BASIC programming, you likely already know that "Compute!" magazine has stopped publishing articles on the TI. C.Regina will now write her columns for MICROpendium beginning in January, 1987. If you are not familiar with MICROpendium magazine, you may obtain a free sample copy by writing to MICROpendium, P.O.Box 1343, Round Rock, Texas 73680. The subscription rate is US\$20.50 for 12 issues. It's a good source of information on where to obtain new software and hardware, and also features software and hardware reviews, news, and updates to existing products.

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[The following article is contributed by STICC member Steve Zabarylo.]

In my quest to eliminate the octopus of cords that has developed around my expanding system my stumbling has led to some discoveries (for me at least) that I wish to share with you. My first wack at the weeds in this tale was a search for a home for the power supply of the external drive.

The thing I like best about the replacement console power supplies is their incredible low price. They do like to be fed 18 or so volts of AC; but another transformer on a cord? YETCH. Well if I can't get the second drive in the PEB, why not the power supply? First of all, is there anything good in there to feed it? Well we certainly have 18vac. One little problem though. One side is ground and if we feed that through the diode bridge input of the power supply the output ground of the power supply will run at least .35volts above the PEB ground. (voltage drop across two diodes in parallel when forward biased) The next option is to take 18v DC from the PEB power supply unregulated +18v rail and bypass the bridge input of the drive power supply. Well it worked very nicely. I even permanently installed the small supply in the PEB beside the on/off switch just in front of the transformer by eliminating the small terminal strip and using the bolts to hold a small plastic L bracket to mount the circuit board. Making the wiring connections permanent was the next step, but here is where the trouble began. Drunk with success, I replaced the temporary wiring incorrectly. It all died, the fuse last. Yes, I blew the transformer. The small power supply was dead meat. (actually only the +5v reg went) The transformer primary was open but only between two taps. My attempt to get back in business was short lived. It would have worked if I hadn't blown two diodes on the PEB power supply board. The second section of the primary winding between the 100 and 220 taps went open too. I was sick. Then I was mad. How can a transformer winding open that quickly? After hacking the fine plastic cover off the winding I was amazed to discover fuses inside the transformer. Now this IS overkill. Should one speculate how many owners have been bilked out of 80.00 or more because of these little tiny fuses inside the transformer winding? Removing a fuse put me back in business. I had to settle for the second choice tap as the 0 to 115 portion of the winding had the fuse installed on the inside of the winding.

The power supply for the drive did not get mounted back in the PEB but I did bring out the unreg +16v to power my console. The modified supply for the console sits atop the CPU shielding on little rubber standoffs. One less transformer on a cord behind the desk and the PEB power switch turns everything on/off. A console reset switch replaces the console power switch quite nicely.

Before I go away and leave you in peace, here's another little tip about the replacement console power supplies. It appears the weakest link on these boards is the output transistor for the -5v. This little devil is a 2SA1024. This device sells for more than the whole board in quantities of one. A much cheaper ECG153 does the job quite well. I've used this modified supply to power my Corcomp RS232 standalone. The -5V instead of -12 is more than adequate as long as you keep the length of your serial port cables reasonable.

So now you know what my dad always says when he hears I've aquired something new. Right! "Has he taken it apart yet?" Keep hacking. (carefully)

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The following article is reprinted from the October issue of the Ottawa Users' Group newsletter:

**PRIOR PATTERNS October 86**  
By Bob Boone

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 hearby 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 its 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 48843 . . . . .or

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.

I saw a Corcomp 512K Memory-Plus in North Bay last weekend. Its owner, Pat Graham, had nothing but praise for the product. Its 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.

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On balance, and I admit, mainly because of MY main applications for the system, which are; library maintenance and correspondance 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 lept a big barrier and annouced 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.

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The following article is also reprinted from the October issue of the Ottawa Users' Group newsletter:

#### 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 describes 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)
```

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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
                        lines per inch)
<(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.

This article is reprinted from the October issue of "NewJug North" (Dumont, N.J.) Users Group newsletter.

THE MYARC 9640 COMPUTER  
by Andy Westner

Everyone is anxiously awaiting the arrival of the new computer, but the word for today is, "Patience". It takes time and a super effort to bring a quality product to market. I assure you that the folks at Myarc are doing a helluva job to finally accomplish what nobody else has been able to in the past.

Although about 20 prototypes already exist and are currently in the hands of beta-testers, the production units will probably not be manufactured until the end of October, to make final software/hardware changes. A computer designed Printed Circuit Board (PCB) and a gate array (a single computer chip that will replace about a dozen existing chips) were recently completed. Work is still continuing in the editing of the Users Manual and in the debugging of some of the software programs which will be included as part of the computer package. This software consists of:

- o Extended BASIC Version 3.0
- o 80-Column Word Processor
- o 80-Column Spread Sheet
- o Cartridge-To-Disk-Conversion Program
- o UCSD Pascal P-Code

Other software that will be available but is still in the development stage includes:

o Lotus 1-2-3 and D-Base III compatible programs (Data files created on IBM computers using Lotus and D-Base can be interchangeably read and manipulated by the new computer using these programs).

- o A BASIC Compiler
- o A "c" Compiler
- o Windows - an integrated program capable of operating several programs at the same time on the same screen.

- o FORTRAN
- o COBOL

Some interesting new features of the new computer include the following:

- o TMS-9995 Micro Processor
  - Runs 3-4 times faster

- Runs the same instruction set as the 9900 Processor, plus 4 additional instructions.
- Pipelined Processor Performs more than one task at a time.
- o V9938 Advanced Video Processor
  - Is software compatible with the TMS9918A processor (in 99/4a)
  - Uses 46 storage registers for high speed "HARDWARE" graphics.
  - Commands include:
    - DRAW, FILL, SEARCH, MOVE.
  - Uses colors from a palette of 512 colors.
  - 7 Graphics modes, some of which allow 256 colors on the screen at the same time.
  - True BMG (Bit-Mapped Graphics) operation. Both composite like 99/4A) and RGB output (like Atari ST and Amiga).
  - 128K Bytes of VDP RAM (8 times the amount in the 99/4A).
- o Real Time Clock Chip gives you or your program instant access to date/time.
- o Sound Chip compatible with 99/4A.
- o Awesome amount of RAM
  - 2K CPU RAM (user configurable between CPU RAM, RAM-Disk, and PRINT-Spooler.
  - Expandable to 1 Megabyte.
  - In 99/4A mode, 64K of the 512K becomes GROM and 16K Cartridge ROM.
- o Built-in Mouse Interface and BASIC support for mouse using industry standard MacIntosh mouse commands
- o Standard Joystick Interface compatible with the current TI joysticks
- o Hardware and software support for the most common peripherals such as disk controllers and RS-232 cards (Myarc, TI and Cor-Comp & RAM Disks (MYARC & Horizon).

- o A New Disk Operating System (DOS) which includes the following commands:

CHKDSK	Check Disk
COMP	Compare File
COPY	Copy File
DATE	Date
DEL	Delete
DIR	Disk Directory
DISKCOMP	Compare Disk
DISKCOPY	Copy Disk
ERASE	Erase
EXE2BIN	HEX to Binary
FORMAT	Format
MODE	80/40 Column Mode
REM	Remark
REN	Rename File/Disk
SYS	System Call Command
TIME	Time of Day
TYPE	Type Command

- o New Extended BASIC (Version 3.0 All the features of MYARC's Extended BASIC Level IV, plus:

- Supports programs of up to 64K and variables of up to maximum memory size.
- User-Defined Function Keys from BASIC. Ex: KEY(n)=A\$ where A\$ can be defined as "CALL CLEAR" or "CALL LINK("SCDUMP")", etc. Then pressing a single FUNCTION key (n) will execute the user-defined command.
- SPEED Command to set execution speed of BASIC programs. Ex: SPEED=12 (maximum speed) SPEED=1 (emulates 99/4a)
- Other new commands include:
  - LLIST List to LIST device
  - LPRINT Print to PRINT device
  - LTRACE Trace program execution to PRINT device
  - MOD returns modulo function.
  - BLINK Blink Characters
  - INVERT Invert Characters
  - MOUSEON Turns Mouse interrupts on
  - MOUSEOFF Stops Mouse interrupt checking
  - MOUSEPRESS Monitors status of Mouse buttons
- o IBM-AT Style Keyboard with large ENTER and SHIFT keys separate Function keys and a numeric keypad/cursor keys and TINY coiled cord connecting it to the PE-BOX.

The faint light at the end of the tunnel is finally becoming a dazzling array of brightly colored flashes. All the shortcomings of the friendliest little computer will soon be erased.



Installing the synthesizer - by H. Caruk S.I.C.C.  
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A while back I heard that some 4/A owners were installing the speech synthesizer inside the console. The idea seemed to have some merit, because the surface on which my computer rests is just a little too narrow for the combined length of my 4/A, the synthesizer, and the I/O port connector for the P.E.B. (That's about as technical as this author gets (on a good day)). At any rate I thought I'd give it a go.

My first query was to a member of another club. Had he heard of this procedure? Yes, but the process was quite technical and not to be undertaken by the uninitiated. In fact the modification was being done by someone he knew for a modist fee. Being more thrifty than easily discouraged (after all I could buy a wider table), I decided to pursue the matter.

An article in "R/D COMPUTING" attributed to one Peter Shubert (TISUG Australia) crossed my path at a recent club meeting. The article dealt with the very process which interested me. Great! Everything I would need.

In brief, which the article was; here's what it said-- " take apart your synthesizer & using a soldering iron and small screw driver pry off the female connector & solder some 16 wire ribbon connector to pins 2 12 34 36 38 40 42 44 1 3 5 19 21(grd) 35 37 39 43 & mount the board on the metal cover of the main console board & solder the ribbon to the I/O port pins & fire it up and hope for the master title screen & if there was no title screen check the wiring & start un-soldering till you get a title screen & warning do this modification at your own risk."

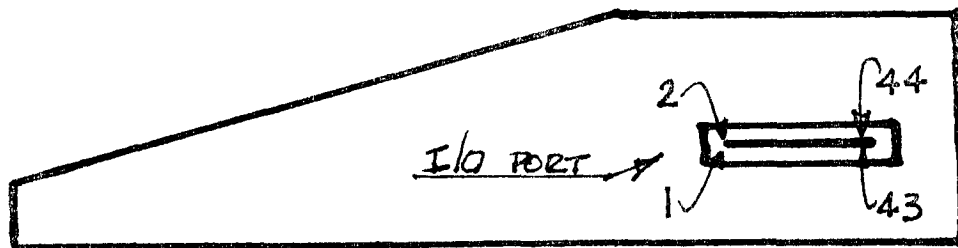
Needless to say, as I said earlier, I don't consider myself that technical and as some heavy reluctance set in, the wider table began to look like my perfect modification. Ah, what the heck, these 4/A's are inexpensive and I knew I had another one somewhere in the basement.

This is a description of how I did it.

STEP 1..get a couple of feet of ribbon connector, soldering iron, screw drivers, knife, T.V. (last game world series), and the computer and synthesizer.

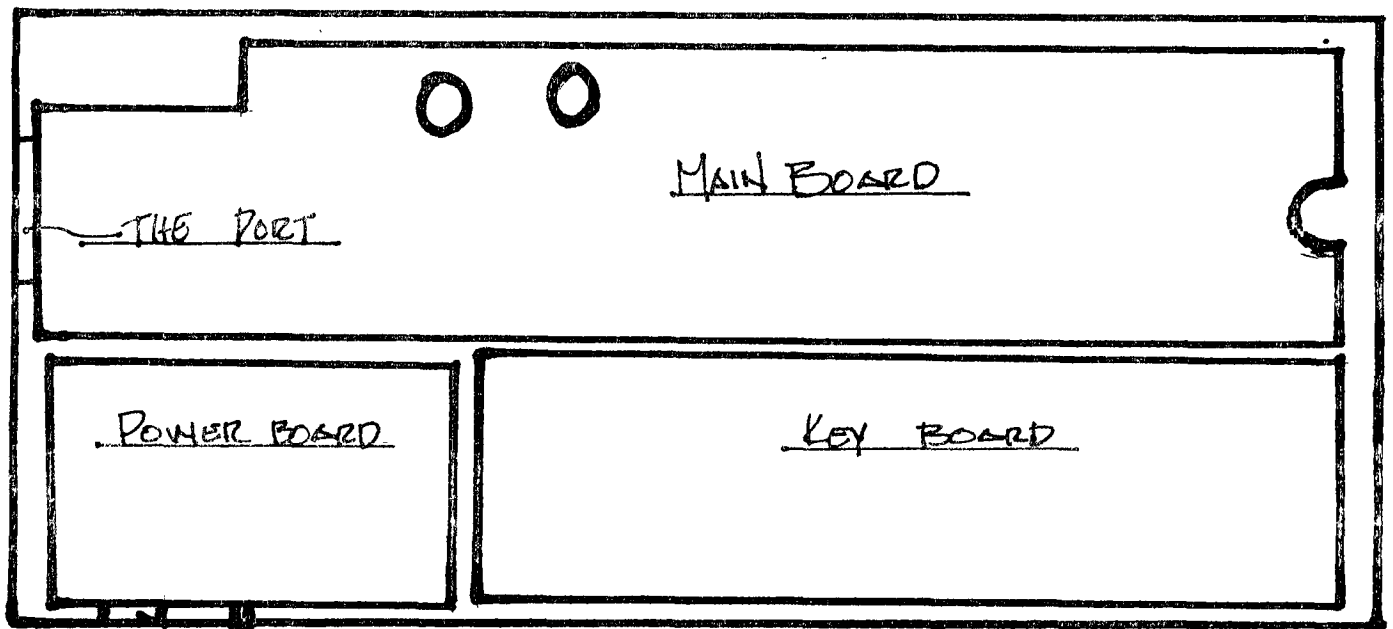
STEP 2..Identify the pin numbers on the I/O port. I found these in a 99/4A manual, and have reproduced the diagram on the next page, drawing number 1.

STEP 3..I took apart the speech synthesizer and removed the circuit board. The article in R/D Computing suggested removing the female connector. After examining the board, I couldn't justify removing the connector; its physical size didn't look like a problem regarding fit and there appeared to be enough room to solder wires directly to the connector. Besides, if the modification doesn't work, it would mean re-soldering the connector to the board. So I left it as is. The pin identification was easy. My speech board had some pins numbered, even if it didn't they could be easily identified from the I/O port diagram (odd bottom, even top).



DRAWING 1

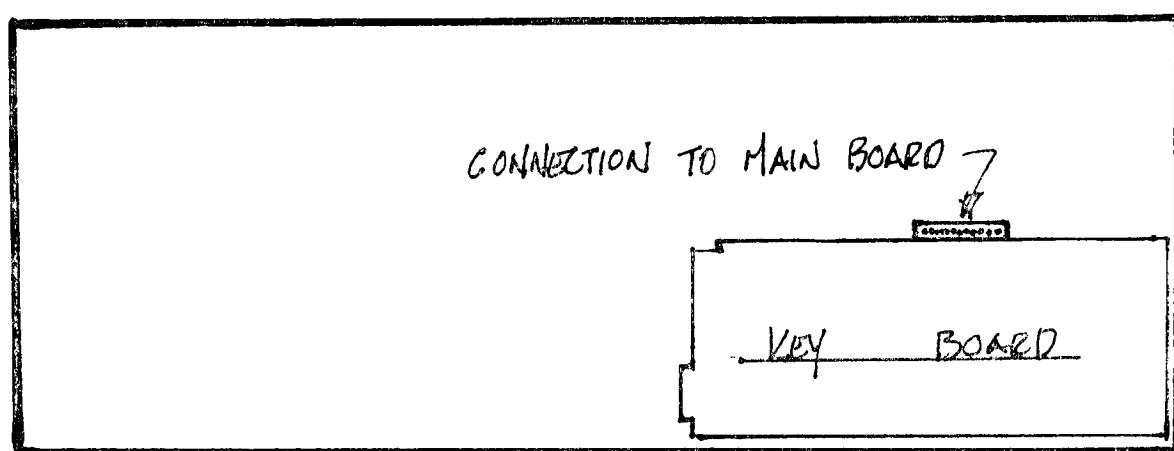
STEP 4..Turn the console upside down and remove the screws holding on the bottom cover. Remove the cover. The only problem here is the off-on switch. The part of the switch which is exposed snaps into the the main part of the switch. These parts have to be seperated with a little force. When the back is off what you see is something like drawing 2.



SWITCH

DRAWING 2

STEP 5..Remove the screws securing the main board. There are large and small headed screws. Remove the smaller ones at this time. The larger headed ones are actually bolts which hold the metal cover together with washers and nuts. I also had to take the power board off and dis-connect it from the main board. The connection is a plug to plug or plug to board type and is easily removed. Drawing 3 shows what's left after removing the main and power boards.



DRAWING 3.

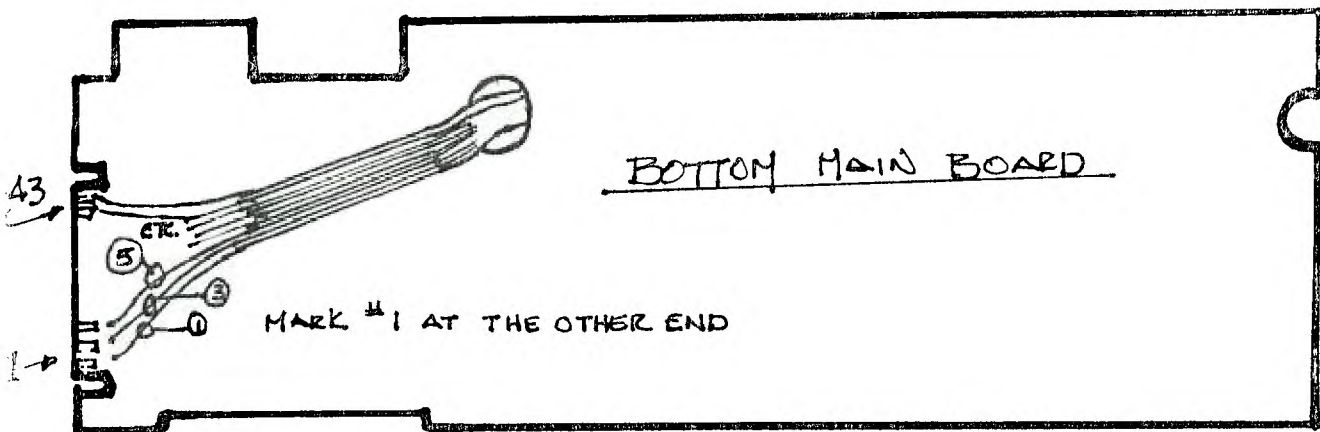
I have two computers which I opened, and I did notice differences in the way they were built. As an example, on one I had to remove the keyboard, so I could re-install and hook up the main board, while on the other I didn't. The difference is in the amount of cable and positioning of the inter connection. At any rate removing the keyboard, if necessary, is easy as it only requires removal of a couple of extra screws.

STEP 6..Remove the metal cover from the main board. Although the article I made reference to before didn't mention removal; I think it simplifies soldering to the I/O port. With the cover in place soldering to the pins would be very difficult, as would keeping track of pin numbers. To remove the cover simply undo the bolts and pull out the cartridge port connection( it plugs into the main board, see drawing 5.

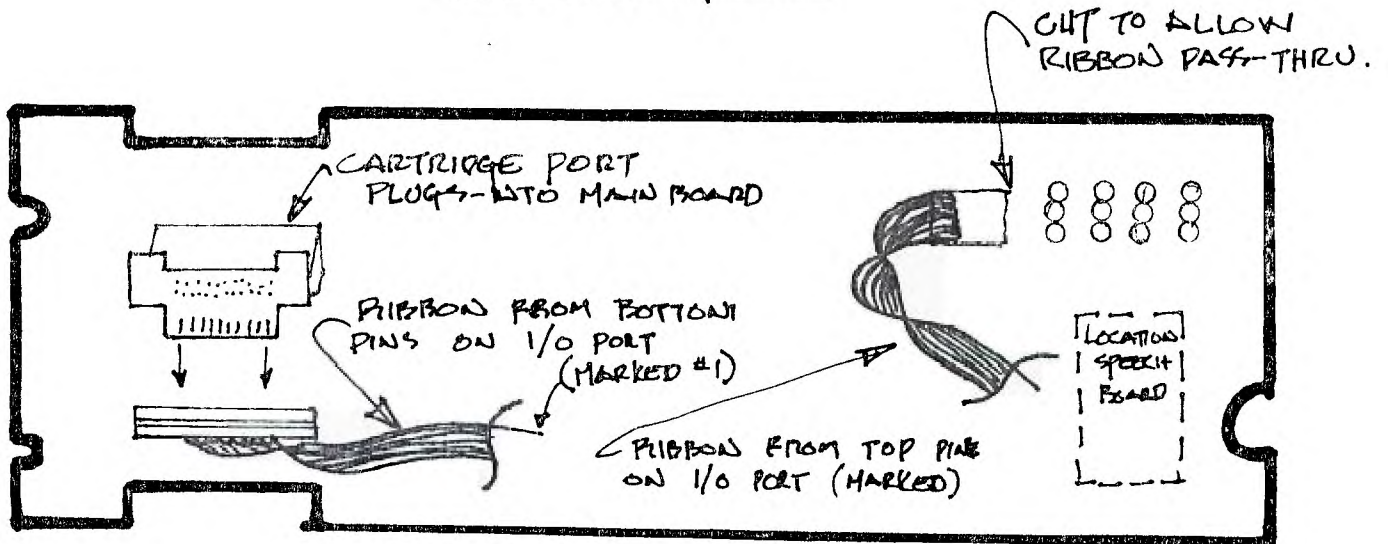
STEP 7..Next I penciled in the pin numbers on both sides of the I/O port connection, cut the ribbon connector into lengths of about 12", seperated about 2" from each end of the connector and stripped about 2mm of insulation from each wire. One ribbon has 8 wires and one has 9 (or 8+ a loose wire). The ribbon I used had 25 wires so I was able to seperate it into an eight and a nine wire ribbon.

STEP 8..The article in R/D suggested soldering directly to the I/O connector pins. I guess that's O.K. if you don't apply excessive solder or solder too close to the front edge. With the metal cover off I was able to solder to a wire connection on the board, which was connected to the pin I was after. In this way I got a neat job without worrying about ruining the pins. One wire is soldered to each of top pin contacts 2 12 34 36 38 40 42 44 and bottom pins 1 3 5 19 21 (grd) 35 37 39 43.

STEP 9..I then marked the wire on the edge of each ribbon which was connected to the lowest numbered pin. That made identification of wires easy for connecting to the speech board. The ribbon was now soldered to the main board I/O port. I ran the ribbon connected to the bottom pins thru a hole in the main board and back up behind the cartridge port, so it was exposed at the top of the metal cover when the cover was in place. I ran the ribbon connected to the top pins along the top of the board and thru some vent holes I had nibbled out. I then replaced the metal cover. See drawings 4, and 5.



DRAWING 4.



TOP MAIN BOARD - METAL COVER ON  
DRAWING 5

STEP 10..I soldered the wires to the speech board just behind the female connector. The wires are connected pin number to corresponding pin number. Pin 21 is a ground. The speech board is then secured to the metal cover with several layers of double faced tape. I located the speech board in an area as remote as possible from the cartridge port as suggested in the R/D article.

STEP 11..Re-assemble the console, reversing the dis-assembly procedure.

STEP 12..I fired up the computer, tested the speech, and everything worked A1. Total time for the modification 2 1/2 hours, including time spent watching the ball game. As usual do this modification at your own risk. And if anyone has a left over screw, I'm one short.

Harry Caruk, Saskatoon T.I.Club