SOFTWARE COMPETITION DEADLINE

MARCH 3, 1987

SATURDAY MAY 16, 1987

TI-FEST

10 A.M. TO 4 P.M.
MERIVALE HIGH SCHOOL
1755 MERIVALE RD.
NEPEAN, ONTARIO, CANADA

MR. Diskette News

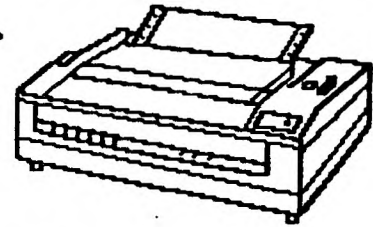**Need a second Disk Drive? We have Panosonics on at a special price of:**

$169.00
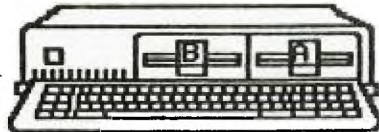
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The Siekosha SP-1000 A is a Near Letter Quality printer that can't be beat. It sports a draft mode at 100 cps and a NLQ mode of 22 cps. With both tractor and friction feed the price can't be beat at

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Bulk DS/DD Diskettes

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HOTLINE NUMBERS

The executive has expressed a desire to assist all members should you have some problems or have some questions,do some library swapping or borrow a book. This will be the place to look. Of course if you wish to be placed on the list just give me a call...I know there is a lot of expertise within our Group. I hope to add to this list and improve the coding. Please respect normal hours unless you specifically know that someone doesn't mind a call at 3am or use the BBS to leave a message at 738-0617, 24 hours a day, 7 days a week.

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HARDWARE AND SOFTWARE REPAIR DEPOT IN RICHMOND HILL(TORONTO)

```
SOFTWARE:::ASL=ASSEMBLY LANGUAGE          Mp=PLATO
           B=BASIC                        Mea=EDITOR ASSEMBLER
           F=FORTH                        Mmm=MINI-MEMMORY
           L=LOGO                         Mmp=MULTIPLAN
           Lb=BOOKS/MAGAZINES             Mwp=TI WRITER
           Lc=CASSETTE LIBRARY            S=SALES
           Ld=DISK LIBRARY                XB=EXTENDED BASIC
           Ls=U/G SOFTWARE SALES


HARDWARE:::BBS=SYSTEM OPERATOR            MBX=VOICE RECOGNITION
           CC=CORCOMP EQUIPMENT           MY=MYARC EQUIPMENT
           I=INSTALLATION                 R=REPAIRS
           M=MODEM EQUIPPED               SS=SALES
```

CHAIRMAN'S TWO CENTS WORTH

by Berry Minuk

There is still no firm news on either the Geneve 9640 or the new IBM compatible card but both of these exciting new products are expected on the market shortly. In fact it appears that there may be another IBM card on the horizon since I have heard that Mechatronics in West Germany are also in the process of bringing out a card to allow IBM compatibility. It will be very interesting to watch the developements over the next few months to see how fast these products reach the market. Even if you buy a new computer as some of our members have, I think it very worthwhile to keep your TI since it takes a new computer about 2 years or so to have a mature software base and in the meantime your TI can provide you with much software that is not yet available on your Amiga, Apple GS or Mac, Atari ST, etc. If any further news appears it will be put on the BBS or announced at the February meeting. Another reason to attend the monthly meetings is our plan to give weight in awarding the membership prize to the number of meetings attended.

In the last newsletter I mentioned that the workshops had begun in Assembly under Art Green. Now I can let you know that Bill Sponchia has started an Assembly workshop for beginners. Further details can be obtained by contacting Bill. The C workshop is continueing on the 2nd Wednesday of the month and has almost finished its first project which was the writing of a BBS in C. At our last session we put up the BBS for test purposes and it worked. There is still some work to be done however.

Once again I would like to stress that it is time to renew your membership. This is even more important than before since if you don't renew this is the last newsletter you will receive. It is very important to us since only the large size of our membersip (over 150) allows us to run all of the activities we do. If you haven't done it yet do it now! Sit and right now and make out your renewal cheque for $20.0 and send it in or bring it to the next meeting with you.

This brings me to a problem which seems to me to be totally unnecessary. I am referring to the difficulty Dick Piche has been having in getting volunteers to bring their equipment to the monthly meetings. At each meeting Dick tries to get names of people who will bring all or part of their systems. However, the results are dissappointing. For February we will not have a system at the meeting. Fortunately we will use this chance to have a lengthy question and answer session, since our last few meetings did not leave enough time for such sessions.

I would also like to call to your attention that our February meeting will be on the 2nd Tuesday rather than the 1st since the School will not be available on the regular date. Don't forget – February 10th at the Merivale High School.

Remember that we still have a cassette library and tapes are available by contacting Jack McAllister.

I will see you all at the February meeting and let's have a super turnout for it. Remember – FEB 10.

EDITOR'S NOTES

by Margaret O'Connor

Don't forget the software competition closing is at the March 3 Meeting.

Lets see if we can have lots of questions for the experts to answere at the next meeting on FEB. 10

See you there.

WRITER-WROUTES

by Jane Laflamme

Using the Formatter can use alot of paper to check and recheck errors while learning how to use it. You can save on paper by "printing" your file to disk rather than the printer. (Be sure to use another file name so you don't overwrite your original file. Ms. Corker, in the booklet TI-Writer Tips and Tricks, recommends placing "P_" to the original filename. e.g.: If "DSK1.MYFILE" is the file created by the Editor, then printing to disk through the Fomatter could be called "DSK1.P_MYFILE".) By loading the "printed" file back into the Editor, you can see how the Formatter works. You can also delete any of those first three line feeds if you don't want them. If you then wish to print the file from the Editor rather than the Formatter, you will have to use "PIO.LF" rather than "PIO".

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. If you have a tip of your own, or a better way of doing things, I'd also like to hear from you! Until next time...keep on TI'ing!

FORTH TO YOU TOO! - SESSION 3

BY LUTZ WINKLER

As mentioned there is an elegant way to autoboot whatever you want your system disk to do, but before we can proceed with that we'll have to consider the following :

Since FORTH is a disk-based system it occupies memory which otherwise would be available for programming. That - in my opinion - is the reason TI provided many of the utilities as LOAD OPTIONS. Look at the menu and also Appendix F. Some of the options, i. e. the editor, are essential, others are rarely needed. For instance, if you are not programming in Code there is no need to clutter up the memory with -CODE and -ASSEMBLER. Similarly, if you aren't going to operate with graphics then there is no need for -VDPMODES etc. It is not very likely that you will run out of memory while still in the learning process but why boot unneccessary stuff? I consider only -DUMP, -COPY and -PRINT along with the editor as essential. To show you how fast memory is occupied even with your extra 32K, do this (assuming you are in FORTH): enter

```
: FREE SP@ HERE - . ;
```
(colon FREE SP@ HERE minus dot semicolon)
Now enter FREE. You should get an answer of about 14140 (9790 if you opted for the 64-column editor). If you want to see how fast memory shrinks with each LOAD OPTION boot a few more, but enter FREE in between them. (If you are convinced enter COLD.) Here is what I autoboot and why :
1. -PRINT so I can list the screens I am working on
2. -COPY so I can copy disks & screens
3. -DUMP which allows me to look at the parameter stack
4. -BSAVE a must to enable the quick autoboot

If you want to use a printer there is one more item to check. Look at SCREEN 72 in the manual or - for practice - call it up from your disk. Look at where it says " RS232.BA=9600". This routine is written for a serial printer operating at 9600 BAUD. If yours is on the parallel port (PIO) you must modify #72 as shown below and FLUSH it to your system disk.

```
SCR# 72
0 ( ALTERNATE I/O SUPPORT FOR PIO PRNTR 04/27/84 LW )
1  0 CLOAD INDEX BASE->R DECIMAL 68 R->BASE CLOAD STAT
2  0 0 0 FILE >PIO BASE->R HEX
3  : SWCH >PIO PABS  10 + DUP PAB-ADDR ! 1- PAB-VBUF !
4    SET-PAB OUTPT F-D" PIO" OPN 3
5    PAB-ADDR V!BW 1 PAB-ADDR  5 + VSBW PAB-ADDR  ALTOUT !
6  : UNSWCH 0 ALTOUT ! CLSE ;
7  : ?ASCII ( BLOCK# --- FLAG )
```

4

```
8          BLOCK O SWAP DUP 400 + SWAP
9            DO I C 20 > + I C DUP 20  SWAP 7F > OR
10             IF DROP O LEAVE ENDIF LOOP ;
11  : TRIAD O SWAP SWCH 3 / 3 * DUP 3 + SWAP
12    DO I ?ASCII IF 1+ I LIST CR ENDIF LOOP
13    -DUP IF 3 SWAP - 14 * O DO CR LOOP
14     OF MESSAGE OC EMIT ENDIF UNSWCH ;
15   R->BASE -->
```

To make sure that everything is ok with your new version of #72,
enter
-PRINT

turn on your printer and enter
SWCH ." THIS IS A TEST" CR UNSWCH
Make   sure   there   is   a space between ." (DOT-QUOTE) and THIS. If
your printer responds with THIS IS A TEST, pat yourself on the back
and play with SWCH ." xxxxxxx" UNSWCH some more. If not, you will
have to start over again, and this time pay close attention,
particularly to spaces!
Before   we   proceed with the actual set-up for your autoboot take a
quick look at any SCREEN between 8 and 19, no not in the manual, on
your   display   (remember   nn EDIT).   Not much there that's legible,
but believe it or not on those few SCREENS resides every FORTH word
that is identified in the Glossary as a RESIDENT word, only they
are saved in a binary form. We will do the same with the LOAD
OPTIONS you decide upon by the use of BSAVE. So let's go. First,
start off with COLD, then boot your options by entering the
appropriate words (-PRINT, etc) and as the final one -BSAVE. Find
the apostrophe key (FUNCT O - that's O not ZERO!). This is also a
FORTH word pronounced TICK (page 3, Glossary). Now enter:
' TASK 22 BSAVE .
(tick TASK 22 BSAVE dot)

Here is what's happening: We are saving in binary form all that has
been added to the dictionary (by booting the LOAD OPTIONS) starting
at screen 22.   We can afford to wipe out 22 and some of the
following screens because they contain the 64 column editor which
you have either booted already (so it's in the autoboot dictionary)
or you aren't going to use it. The final dot will print on your
display the first screen after the BSAVE is done. All other LOAD
OPTIONS remain intact and can be booted when needed.

Now for the finishing touches. Enter

EMPTY-BUFFERS 3 EDIT

and carefully erase all but lines 0,1,2,13 15. On line 2 take out
the parenthesis around 84 LOAD, and change 20 LOAD to read 22
BLOAD. You might want to replace the word BOOTING on line O with
some other phrase which would let you know that you are using your
new system-disk. On line 5 put: O DISK_LO ! and depending on how
many drives you have and whether they are single or double sided
enter ONE of the following:

(for one single-sided drive skip this)
90 DISK_SIZE ! 180 DISK_HI ! (for 2 single sided drives)
180 DISK_SIZE ! 180 DISK_HI ! (for 1 double sided drive)
180 DISK_SIZE ! 360 DISK_HI ! (for 2 double sided drives)

Note that these words use the underline, not the hyphen.
(If you have double DENSITY drives it is not quite that easy, you
have to make several modifications to screens 33 and 40 as well as
define a new word to install a proper disk header.)

After you have FLUSHed your edit go COLD and with any luck you will
have a working system disk. You are ready for FORTH. It's time to
start learning and for that read Chapters 1 and 2 of STARTING
FORTH.   I went through the book first and annotated each page with
the corresponding remarks from the manual's Appendix C (Notes on
STARTING FORTH).

Enjoy.
End Session 3

TIMP TIPS AND TECHNIQUES

by

Steve Zimmerman

Last month, I said that it was not possible to open two windows in MulTIplan and keep both linked if they intersected. With the Vertical and Horizontal commands, this is true (or, if it's not, I've not been able to do it!), BUT—there IS a way to keep your row labels on the left in view and also keep your column labels in sight. To do this, you must use the Title option, rather than the Vertical or Horizontal options. The command sequence is Window, Split, Title.

Before you enter this, make sure than your cell pointer is in the column to the right of your labels column and in the row below the row which contains your column labels. Multiplan will propose the number of rows and columns to be contained in the label windows, so if you didn't have the cell pointer in the right place, just enter the appropriate number of rows, tab over, enter the appropriate number of columns, and hit Enter. Multiplan will create 4 windows, numbered clockwise from the upper left, 1,2,3, and 4. Window 3 will be the active window, containing your data. You can now move to any row or column of your worksheet and still be able to see your row and column labels. This is a great help in entering data in a large worksheet!

One other command in the Window area, and one which I haven't used much, is the Border command. This command places a border around the active window or windows (depending on how you use it). On a 40-column display, this takes up room that I feel I need for data display (after all, 40 columns by 20 to 24 lines shows little enough as it is!). On a larger screen, however, it would be useful to help distinguish between open windows. Now, all I need is an 80 column by 60 line monitor, with infinite resolution, and I'll be all set...

In the Title mode, i haven't been able to put borders around more than 2 windows. If I try for a 3rd border, the message "Window will not fit" appears. In the Vertical and Horizontal Split modes, however, I have been able to set up borders around 3 of 4 open windows before having "Window will not fit" appear (on my 4th window attempt).
It is possible to link multiple vertical or horizontal windows so that they will scroll together. Generally, however, in the V or H split mode, the last window opened as a linked window overrides any previous linkages which conflict. his brings me to the last command in the window group, the Link command. This command allows you to redefine links between windows, thereby linking unlinked windows or unlinking linked windows. When you key Link, you see a command saying, Link window number: X with window number: Y linked:(yes)no. As with other Multiplan commands, you use the TAB (ctrl 2) to move your command cursor between fields. The first window number will be the active window, the second will be the previous active window (or previously created window), and the linked: field will show whether they are or are not linked at present. To unlink, TAB down and change Yes to No. To link a different set of window, change the window numbers shown to those you wish to link. If Multiplan finds a conflict (or an intersection), it will reply, "cannot link those windows". If this happens, you will have to unlink the conflicting windows before establishing the new link.

To sum up, Split lets you create multiple windows, Border lets you highlight or separate windows visually, Close lets you uncreate windows, and Link lets you set up or break links between windows. You can Split your screen into up to 8 windows (if you can get them to fit and still show you anything!), you can Link windows to make them scroll together, and you can use the Title command to show row and column labels to make data entry easier on a large sheet. To move from the active window (which is the most recently created window) to another, use ctrl 6 (change window).

The ability to use multiple windows is one of the most powerful features of MulTIplan (and, as I mentioned last time, one that I REALLY MISS on my portable machine!). I suppose that I had to give up SOMETHING to obtain portability...

Moving on from Window to the last command on the Multiplan command line, the Xtern command, let me mention one very useful ability that you have here. As I've mentioned before, the Xternal Copy command allows you to copy values from another worksheet. You can use one sheet for data entry, calculate totals on that sheet, Name the cell(s) containing the total(s), and copy the totals to another worksheet using the Xternal Copy command. Xternal Copy DOES NOT copy formulas --just values!

Lets suppose that you have 12 worksheets (one for each month) which are set up identically, having the same Name(s). If you link one--let's say January--to another sheet, you can copy the January value(s) each time you load the second sheet. Suppose, however, that you want to use the values from the March sheet instead. The Xternal Use command allows you to do this! Just key X, U, MARTOT (the March filename), instead of: JANTOT (the January filename), and, Presto! you now have the March data copied in. To change it back, key JANTOT instead of: JANTOT. The instead of: field is always the original filename that you had used to establish the external link.

Well, I guess that this is enough confusion for one month. Again, if you have questions or topics you would like covered, leave me a message on one of the boards (SCCG or TI SIG). In closing, I'd like to thank Rick Cosmano for making the changes in the MPINTR program available so quickly on the SCCG board. Thanks, Rick! It make starting up a lot easier now!
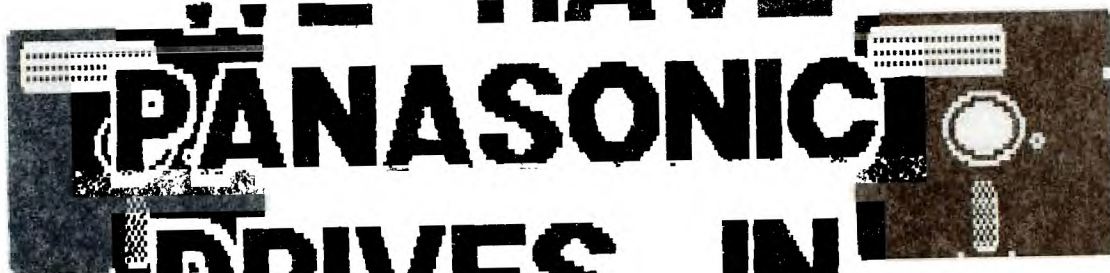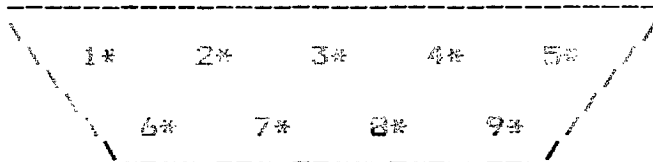
BASIC INPUTS AND OUTPUTS FOR THE TI CONSOLE
PART 2
by DAVID CARON

Cassette outputs can be even more usefull than you can imagine. With simple BASIC commands, you can control simple circuitry. Below is a diagram of the TI-99/4A console cassette port.

```
  _____
 \                               /
  \  \  1*    2*    3*    4*    5*  /
   \  \                         /
    \  \   6*    7*    8*    9*  /
     \  _____/
      _____/
```

Pin 4 is not used however it is connected to the comupter's internal circuitry as TI was planing to use it for future accesories.

All the definitions of the pins relate to the TI-dual cassette cable.

Pin 1 --CS1 remote (outer protrouding end of the black plug, the one with the read and white plugs).
Pin 2 --CS1 remote (inner circular portion of the black plug).
Pin 3 --BOTH cassette's record lines (iner portion of BOTH red plugs).
Pin 5 --BOTH cassette's record lines (outer portion of BOTH red plugs).
Pin 6 --CS2 remote (outer portion of the other black plug, the one with the red plug).
Pin 7 --CS2 remote (inner portion of the other black plug).
Pin 8 --CS1 play back line (inner portion of the white plug).
Pin 9 --CS1 play back line (outer portion of the white plug).

Both CS1 and CS2 remotes can be controled by the user from BASIC using file routines (Refer to the section on File Processing in the "User's Reference Guide").
EX.
OPEN #1:"CS1",OUTPUT,FIXED 64

will make Pins 1 and 2 an open circuit (electricity will not pass through the pins) after you get through all the prompts. Replacing CS1 with CS2 will likewise put pins 6 and 7 in the same state.

PRINT #1:DUMY (- meaning a dummy variable, any variable will do)
will cause pins 1 and 2 to became a closed circuit for a short lenght of time (electricity can pass through the pins). If you use CS2 in the OPEN statement pins 6 and 7 will perform the same action.

The duration of the action can be increased by changing the length of the fixed record to 128 or 192.

CLOSE #1
will return the state of the remotes to their former condition, which was closed.

By replacing an on/off switch of a low voltage circuit (preferably no more than 12 volts) with either pins 1 and 2 or pins 6 and 7 you can control when the circuit will turn on and off. If you wish to control applications taking greater voltage, I would suggest you could have the computer control a relay which in turn turns on and off the application.

NOTE: People with grey and beige TI's will have great difficulty attempting to use the CS2 remote because the circuitry for it does not exist even through BASIC still accepts it as a valid filename. In the next article I will explain how to add the missing circuitry needed to make the CS2 remote function.

THE DISK CONTROLS

By Michael A. Ballmann

This series of articles will explain some of the secrets of the TI
disk controller. To start off you need to know severial memory
locations and commands. At all of these address the data is
inverted.

```
>5FF0   status read address
>5FF2   track address read
>5FF4   sector address read
>5FF6   data from disk
>5FF8   command write address
>5FFA   track address write
>5FFC   sector address write
>5FFE   data to write
```

TYPE	COMMAND	BITS								
		7	6	5	4	3	2	1	0	
I	Restore	0	0	0	0	h	v	R	r	
I	Seek	0	0	0	1	h	v	R	r	
I	Step	0	0	1	u	h	v	R	r	
I	Step in	0	1	0	u	h	v	R	r	
I	Step out	0	1	1	u	h	v	R	r	
II	Read command	1	0	0	m	b	e	0	0	
II	Write command	1	0	1	m	b	e	A	a	
III	Read address	1	1	0	0	0	e	0	0	
III	Read track	1	1	1	0	0	i	0	s	
III	Write track	1	1	1	1	0	1	0	0	
IV	Force interrupt	1	1	0	1	j	k	l	n	

```
h=1 load head at begining
v=1 varify track register
u=1 update track register
m=1 multiple records
b=1 IBM format (TI uses IBM format)
e=1 enable 10ms delay for head settling
Xa  binary count data marks (FB,FA,F9,F8)
Rr  binary count for step speed (6,6,10,20ms)
jkln various interupts (use '0')
```

Don't be too worried if you do not understand how any of these
instructions are used. All will be explained by the end of this
series.

The CRU base addresss for the disk controller is >1100 and must be
in register twelve. With R12 loaded these bits can be used for
various control functions with the SBZ and SBO assembly language
instructions.

```
SBO +0 turn on card
    +1 motor on by toggling this bit
    +2 activates the ready line
    +3 sets head load line
    +4 selects drive called DSK1
    +5 selects drive called DSK2
    +6 selects drive called DSK3
    +7 selects side two of drive
```

Now for this month's program segment. This part will read a track
on a disk in drive one. The track can be protected and does not
have to be formatted for this program to read it. (No you can not
read a track then write it to copy a disk some of the control
information will change.)

```
****************************************************
*                                                  *
* READ TRACK                                        *
*                                                  *
****************************************************

        DEF   TREAD          DEFINE START
TREAD   LWPI  MYREG          LOAD WORK REGISTERS
        LI    R12, 1100      SET CRU ADDRESS
        SBO   +0             TURN ON CARD
        SBZ   +5             NOT DRIVE TWO
```

```
                SBZ    +6              NOT DRIVE THREE
                SBO    +4              SELECT DRIVE ONE
                SBZ    +7              SELECT SIDE ONE
* zero track program goes here later
*AGAIN  BLWP   GET#            for later program
*       BL     SETTRK          for later program
        LI     R2, 1000        SET BYTE COUNT
        LI     R10,TBUFF       BUFFER POINTER
        BL     SENDC           SEND COMMAND
        DATA   1B00            READ TRACK CMD INVERTED
        SBO    +2              ENABLE READY
TREAD1  MOVB   5FF6,RO         READ BYTE
        INV    RO              MAKE NORMAL
        MOVB   RO,*R10+        SAVE BYTE
        DEC    R2              ADJUST BYTE COUNT
        JNE    TREAD1          LAST BYTE? NO
        SBZ    +2              DISABLE READY LINE
        NOP                    display routine
        NOP                    goes here
*****************************************************
*                                                   *
* USE DEBUG TO VIEW DATA PUT BREAKPOINT             *
* WHERE THE TWO NOP'S ARE AND USE 'M'               *
* TO LOOK AT THE BUFFER 'TBUFF'                     *
*                                                   *
*****************************************************
STOP    JMP    STOP            WAIT HERE FOREVER
*       JMP    AGAIN           for later program
SENDC   MOV    *R11+,RO        GET COMMAND
        MOVB   5FF0,R6         READ STATUS
        SLA    R6,1            GET READY BIT
        SRIZ   +1              TOGGLE DRIVE ON
        SBO    +1              *
        JOC    WRTCD           READY SET? YES
        LI     R6, 7530        SET-UP DELAY
WAITL   SRC    R5,4            * SO MOTOR CAN
        SRC    R5,4            * GET UP TO
        DEC    R6              * SPEED
        JNE    WAITL           DELAY END? NO
WRTCD   MOVB   RO, 5FF8        SEND COMMAND
        SBO    +3              LOAD HEAD
        SRC    R5,8            KILL TIME
        SRC    R5,8            KILL SOME MORE
     ----> continued ---->     ------>
        B      *R11            RETURN
MYREG   BSS    20              WORK REGISTERS
        TEXT   'BSTART'        SO START CAN BE FOUND
TBUFF   BSS    1000            BUFFER
        TEXT   'BEND'          SO END CAN BE FOUND
```

Next month's article will present the control information on the disk and a program to accept a track number from the keyboard. Now unless someone wants to write a program to display this information on the screen and share it with us it will be the last program presented. Save each of these program segments as a separate file.

BROWSING THE LIBRARY

--with STEPHEN BRIDGETT

This month I want to announce plans that I have begun to implement for your SOFTWARE LIBRARY. The question of a proper catalogue for the software has come up time and time again, but unfortunately the solution of providing members with even a reasonably up to date PAPER version has been immensely labour intensive. Over the past couple of months I have reviewed many disk cataloging programs and have decided on one which I feel offers the best overall performance. Through the use of the program and the fact that most people have at least one disk drive, a catalogue will be produced, be maintainable and attainable. There will be a minimum of paper copy editions for cassette based users who wish to have a disk copied to cassette. On this note it is worth repeating that a great deal of club software presently in disk format will run from cassette, and our very own ART GREEN has already written a program to dump a disk to cassette. It bears repeating also that the club CASSETTE BASED SOFTWARE is rather extensive. JACK McALLISTER does an excellent job of making it available (see tel. no.s at end of article).

The best is yet to come. Because this disk based catalogue will consist of various files ie; games, music, utilities etc, it will be available via the BBS. A schedule of updates will be a primary file so that members can do a quick check to see if their particular area of interest has been updated. If so the file can be downloaded and PRESTO you have the latest software catalogue. Complete and up to date versions will be available at monthly meetings. The files can be viewed with the cataloger program and the program supports a search function.

The above will free up yours truly to actually maintain the library. If there is something of interest in the library, all you have to do is call me, leave a message on the answering machine, clearly requesting which disk you want and I will bring it to the next monthly meeting, the cost is $ 3.00.

WHEN you say ? Well not immediately but certainly in time to distribute copies at the TI FEST, May 16. I hope to have it in operation much sooner, but as things have gone lately I don't want to make hard predictions.

Now a few words about the DISK OF THE MONTH. For various reasons there has been problems with the monthly disk. The software has been blessed with a variety of glitches. In November it seems that the copy utility used to make the disks corrupted some files. There are I'm sure still some bad copies out there and I will have clean versions available in Feb. December saw the Xmas Music disk which was a success except for one program. If anyone is able to debug EDELWEIS perhaps you can also update the library. Which brings me to January. The TI DIAGNOSTICS, released by TI with paperwork, is an excellent purchase at a mere $4.00, including 2 disks. However the gentle readers will no doubt by now realize that

TO RUN TI DIAGNOSTICS CHANGE THE ...DISK NAME TO "TEST"

Let us hope that this has not given the library a black eye. I have had many offers of help and it is gratifying that our members are so keen and supportive. That attitude keeps TI alive and well. In fact at the moment I am unable to employ all the those who have made offers. Nevertheless, there are several important things that all members can do to ensure the success of the library. This includes; typing in programs and submitting them to the library, creating documentation files for programs, as they are used and debugging or at least reporting of program problems. Remember, if you have a program then quite likely it is in the library and if your version is faulty it is quite possible that the club's is too. It is simply impossible for any one person to wade through 5000-6000 files to locate and document or repair problems. If you are aware of problems, lets keep a record. Bob Lanoy is already working on documenting the games, this will be an ongoing process, which can never be trully complete. You can refer to Bob to adopt a standard format.

The disk of the month for February will feature computer scanned pictures. These are hi-resolution pictures and for anyone who has not seen one, it is fascinating. The pictures can be dumped to your printer.

Well that's about it. I hope that your interest in our library remains enthusiastic. All apologies to those who have had some degree of frustration.

DISK BASED SOFTWARE.......STEPHEN...521 3631

CASSETTE BASED SOFTWARE...JACK...225 6989

DOCS AND FIX PROJECT..... ...BOB...729 0843

LETS HAVE A GOOD TURNOUT IN FEBRUARY

SOFTWARE CONTEST

OBJECTIVES:

The primary objective of this contest is to encourage and promote member written programs. The secondary objective is to have member written programs in our Users' Group library and make them available as freeware distribution around the TI globe.

CATEGORIES OF CONTEST:

1. Games & Entertainment; 2. Bussiness, Education & Utilities; with each category broken into three levels: Novice, Intermidiary & Expert. There will be a minimum of 7 prizes: a grand prize which will be drawn and 6 other prizes awarded to the best programs (3 in each category). The grand prize will be determined at our february general meeting; for the other prizes, sponsers and advertisers will be solicited.

RULES OF THE CONTEST:

1. The contest is open to all paid up members of the Ottawa TI-99/4A Users' Group, including executive and committee members, with the exception of the contest chairpersons and their families.

2. The programs may be written in any language; e.g. BASIC, Extended BASIC, FORTH, ASSEMBLER, LOGO, C, PASCAL, etc...

3. Entries must be received by or at the March 3, 1987 general meeting. At the discretion of the chairpersons, late entries may be accepted provided a chairperson is advised in advance that an entry will be submitted at a later date.

4. Entrants should document programs where necessary, and mark clearly in which category, level and programming language the entry is to be judged, together with a declaration that the program has been written by, and only by, the Entrant. Multi-author programs are accepted provided that each author is clearly identified.

CONCOURS DE LOGICIEL

OBJECTIFS

Ce concours a pour principal objectif de promouvoir et encourager nos membres à écrire des programmes. Il a de plus comme but d'enrichir notre programmathèque de logiciels écrits par nos membres et de permettre leur libre circulation dans le monde de TI.

CATEGORIES

1. Jeu et loisir; 2. Affaire, éducation et utilitaire. Chaque catégorie comporte 3 niveaux: novice, intermédiaire et expert. Il y aura un minimum de 7 prix: un grand prix qui fera l'objet d'un tirage et 6 autres prix pour les meilleurs programmes (3 dans chaque catégorie). Le grand prix sera choisi à notre réunion de février. Quant aux autres prix, des commanditaires seront sollicités.

REGLEMENTS DU CONCOURS

1. Le concours est ouvert à tous les membres en règle du Ottawa TI-99/4A Users' Group, y compris les membres de l'exécutif et des comités, à l'exception des responsables du concours et de leur famille.

2. Tous les langages sont permis: BASIC, BASIC étendu, FORTH, ASSEMBLEUR, LOGO, C, PASCAL, etc...

3. Les oeuvres doivent être reçues au plus tard à la réunion du 3 mars 1987. Les responsables pourront accepter une participation tardive si l'un d'eux est informé d'avance qu'un programme sera soumis plus tard.

4. Les participants doivent fournir la documentation appropriée, s'il y a lieu, clairement indiquer dans quels catégorie, niveau et langage de programmation il se classe, et fournir une déclaration à l'effet qu'il est le seul auteur du programme. Un programme écrit par plusieurs n'est accepté que si chaque auteur est clairement identifié.

5. Outside judges may be selected. Their decision will be final. Entries will be judged according to the following criterias: a) ease of use; b) quality and accuracy of the documentation which go along or of the instructions which are incorporated into the program; c) aesthetic and style; d) performance; e) expertise within the language.

6. All entries will be elegible for the grand prize. One person may enter as many times and in as many categories as they wish, but will only have one chance at the grand prize. Grand prize winner is also eligible for prizes in individual categories.

7. The draw for the grand prize will be at the TI-FEST. Winners of each category will be announced at the fest; the programs will be on display at the fest and will be published in the Newsletter.

8. All entries become the property of the Ottawa TI-99/4A Users' Group.

INFORMATION:

Enquiries may be directed to the following contest chairpersons (before 9.00 P.M.):

Thom Mercer: 837-9449
Henri Monat: 824-0941

5. On pourra choisir des juges non membres. Leur décision sera finale. Les oeuvres seront jugées selon les critères suivants: a) facilité d'utilisation; b) qualité et précision de la documentation fournie ou des instructions incorporées au programme; c) esthétique et style; d) rendement; e) expertise de programation.

6. Toutes les oeuvres sont éligibles au grand prix. Un participant peut soumettre plusieurs oeuvres, mais il n'a jamais plus d'une chance pour le grand prix. Le grand gagnant est aussi éligible aux prix des catégories individuelles.

7. Le tirage pour le grand prix sera effectué au TI-FEST et les gagnants de chaque catégorie y seront annoncés. Les programmes y seront aussi en montre et seront publiés dans le Newsletter.

8. Toutes les oeuvres sont la propriété du Ottawa TI-99/4A Users' Group.

RENSEIGNEMENTS

On peut s'adresser à l'un ou l'autre des responsables suivants (avant 21.00 heures):

Thom Mercer: 837-9449
Henri Monat: 824-0941

TI-WRITER

LE MODE DE COMMANDE
(introduction)

Lorsqu'on choisit le mode EDITEUR, le texte suivant apparait à l'écran :

Edit,Tabs,Files,Lines,SearcH,Recover Edit, or Quit
OOO (curseur)
OOO1

Les deux premières lignes sont une partie du mode de commande. Le curseur clignote sur la deuxième ligne en attente d'une commande. Le "OOO1" de la troisième ligne indique la ligne no.1 du texte. A ce stade-ci, cette ligne est vide puisqu'aucun texte n'a été écrit ou appellé encore.

Les commandes de la première ligne sont des commandes-types et la plupart appelle des sous-commandes plus spécifiques. La commande **Files,** par exemple, regroupe les sous-commandes **Load File, Save File, Print File, Delete File, Purge** et **Show Directory.**

Les lettres majuscules ne sont pas un caprice de présentation : elles correspondent aux lettres qu'il faut utiliser pour appeller ces fonctions. En appuyant sur "F" ENTRES en mode de commande, on obtient le sous-menu de **Files.** En tapant ensuite LF, on obtient l'option **Load File.** On peut taper directement LF à partir du menu principal si on le désire : celà devient une habitude avec l'expérience.

A noter que TI-WRITER utilise un écran de 80 colonnes ; par contre, seulement 40 colonnes à la fois sont visibles. Utilisez les flèches pour déplacer le curseur vers la droite et vous verrez soudainement l'écran changer et d'autre texte ou commande apparaitre. C'est ce qu'on appelle une fenêtre : puisque TI-WRITER ne peut montrer 80 colonnes en même temps, il le divise en trois écrans de 40 colonnes :

    o ECRAN 1 : colonnes 1 à 40
    o ECRAN 2 : colonnes 20 à 60
    o ECRAN 3 : colonnes 40 à 80

Outre le mode de commande, TI-WRITER dispose de fonctions directement accessibles à partir de l'écran. Ces fonctions sont toujours appelées avec la touche FCTN et un chiffre de 0 à 9 ou par la touche CTRL et un chiffre. Ces fonctions facilitent les manipulations courantes de texte. Au cours des prochains mois, nous allons voir une à une chacune de ces fonctions ainsi que les options du mode de commande.

En ce qui concerne le **mode de commande,** chaque fois qu'il est appelé (FCTN 9), le premier menu apparait au haut de l'écran ; donc pas besoin de mémoriser inutilement. Dans le cas des fonctions, une languette de rappel vient avec le programme. Sur cette languette se résument comme suit les principales fonctions :

    FTCN 1 : efface un caractère
    FTCN 2 : mode d'insertion
    FTCN 3 : efface une ligne au complet
    FTCN 4 : prochain écran
    FTCN 5 : prochaine fenêtre d'écran
    FTCN 6 : écran précédent
    FTCN 7 : prochaine tabulation (TAB)
    FTCN 8 : insère une ligne
    FTCN 9 : MODE DE COMMANDE
    FTCN 0 : numérotation des lignes

    CTRL 1 : ZUT!"récupère" l'erreur...
    CTRL 2 : formatage ou reformatage
    CTRL 3 : couleur de l'écran
    CTRL 4 : paragraphe suivant
    CTRL 5 : reproduit la ligne précédente
    CTRL 6 : paragraphe précédent
    CTRL 7 : prochain mot (tabulation)

```
CTRL 8 : nouveau paragraphe
CTRL 9 : nouvelle page
CTRL O : MODE FIXE
```

Notons que la touche "QUIT" renvoie au mode de commande.

Donc, avant d'aller plus loin, un peu de pratique en essayant pour le plaisir et la surprise quelques unes des fonctions et des commandes. Commencez à écrire un petit texte qui vous servira d'exercice pour les prochains articles. Pour sortir du mode de commande et tomber dans le texte (ligne 0001), tapez simplement E (pour Edit) ENTER.

A la prochaine.

<div align="center">

ARTICLE
by Tony **McGovern**

taken from ENTOMOLOGY CORNER #8

</div>

Spring has sprung and the days are getting longer. Just as well as we have a bunch of rainforest tree seedlings to plant out. Have to keep the funnelwebs happy and feeling at home somehow. On the computing front from time to time minor changes and updates are made to Funlwriter. I'm going to have to think of a better name for that program now that it has outgrown its original bounds by so much. The latest version of DM1000 (Vn 3.3) was received from Bob Boone in Ottawa and promptly interfaced to F'Wr as part of the current issue.

The C99B adapter file has also been revised so that it works with both the existing Vn 2.0 of c99 and the upcoming Vn 2.1 as well. There is also a C99PFI file modified by re-assembly to bypass unloading of the E/A utilities from GROM in all circumstances. This allows c99 program files to be run from F'Wr and E/A, which is how we usually use it. This may well be the last issue of the c99 compiler for the 99/4a as Clint Pulley is now working with a sample of the new Myarc Geneve computer. Clint sounds very happy with the new machine, with its faster operation of TI-Writer, and real single-key cursor operation on the IBM type keyboard.

Another no-no we were just painfully reminded of is turning off the power to a second or third external drive while it is still connected up to the computer. Attempts to access or even just catalog the first drive may then destroy disks. This happened to our first Newsletter Editor, Steve Taylor and I think it has just struck here too with disastrous results to the only copy of some Source code!

There does appear to be one residual bug in F'Wr that I am aware of but have not yet been able to fix. As reported by Woody Wilson from San Diego, the one that prompted several bug fixes and polishings. I never could reproduce the original, and assumed I had fixed it in the process. As you well know, program bugs just go into hiding unless explicitly squashed, and this one was no different.

Brian Rutherford unearthed it again the other day, when he Listed an assembly to his printer and found line feeds weren't being sent to the printer. So where was it hiding ? In the PIO routine. Why didn't we find it before ? Because we use a TI-99 printer always set to RS232.BA=4800, and the bug only shows up with PIO. This is very strange because the only obvious relevant difference between F'Wr and E/A is that E/A opens the LIST device from GPL while F'Wr uses its normal DSRLNK routine. The trouble with that as an explanation is that F'Wr's DSRLNK is identical to TI-Writer's and that works perfectly with PIO, otherwise we would have heard the screams long ago. I am going to have to dig deeper.

As assembly programmers already know from the E/A manual the RS232 card is an unruly beast which doesn't always follow the Tech Manual specs - and it runs deeper than just not preserving the GROM address. For the time being if you have a parallel printer, the work-around for Listing short to medium length assemblies is to list to disk and then use the Editor to print out the file. For long files it may be better to reset the printer to handle the absence of line feeds.

William has been busy too, mostly engaging in conversations with disk controller chips. His DISKHACKER program (part 1) was demonstrated at the last Club meeting and is now being sent out as a fairware release. [available from Stephen Shaw]. For those who weren't there it analyses sector patterns on a disk, track by track, and presents the analysed information for your inspection.

It starts off where MG's Advanced Diagnostics leaves off in a trail of deception, refusing to present perfectly good but non-TI-standard tracks, let alone present any of it in analysed form. The first release works with TI Controllers. It's not that he doesn't know how to make Corcomp and Myarc controllers jump throuh hoops already, but just that he can't face rewriting an existing working program when there are new worlds to conquer. It is an interesting exercise to inspect the details of various protection schemes used on commercial disks.

I have been embargoed from even hinting at the details of the protection methods used on more recent commercial disks until after later parts of DISKHACKER are released. Suffice to say that DH'r is a sector analyser.

This is all a lesson in the futility of disk protection as practised. All it does is make the programs so treated inconvenient and inflexible in use, and puts the serious user to the bother of removing the protection to make a backup.

As an engineer quoted in a fascinating recent article in the IEEE Spectrum on protection methods said -- "I regard disk protection as a bug, and when I find a bug I fix it". A disk is a fragile enough form of archival storage, let alone in regular use where it may encounter a malfunctioning computer, or even just one with external disk power not switched on. Our personal policy is to refuse to buy any program on a protected disk. In practice it doesn't cause any hardship as none of the programs we have seen in this format are such that they can't be lived without. Let's take as a recent example the Miller's Graphics DISKASSEMBLER.

From what we've seen it looks like a very good job has been done on it. Is the idea original ? Well, not really because it has been obvious for some while, and such programs are found on other systems. Will and I discussed the idea of writing a program to disassemble from disk files, recognising that it would have been convenient to have had earlier. With no pressing need apparent, and much work to be done on other things the idea was shelved. We weren't the only ones either, because there is a fairware program Universal Disassembler written in FORTH available from Stephen Apart from initial inspection we haven't had occasion to use that one either, but it looks a good program too. DkA came our way as the protected disk with a request to make a backup for the owner. William can't resist a challenge like that, and it took him precisely one day to clone the disk using only programs he had written himself, apart from using the DkA on its own loader.

Since then we have had reports that a cracked version is circulating in the USA. This news seems quite believable because it took Will only one day more to reduce DkA to E/A program files. And if a 16 year old high school kid in Newcastle can do it that quickly, then how many more must there be across the whole US of A who can do the same ? Now comes the silly side of the protectionist's paranoia. I decided that DkA looked like a worthwhile program to have and use, and that if we used it, it would be from a genuine original.

So I wrote to Miller's requesting price quotation on an unprotected version of the program, and received a rather prissy reply to the effect that they didn't sell it unprotected. So there was one sale lost to protection, and I'm sure the refusal won't have helped curb piracy one little bit even if Miller's wouldn't trust us to respect their copyright.

I think it is also true now that many of the best and most distinctive programs for the TI are not protected, and come as fairware for that matter too. And outside the TI world you only have to look at the quality, value, and success of Turbo-Pascal along with Borland's later products.

All writers of disassemblers seem to have one thing in common,

share holdings in suppliers of printer paper and ribbons.

While the thought of protected software brings the fragility of disks to mind I should remind you of TI's advice in their Software Development Handbook --- always maintain 3 copies of important program or source files that you are working on. Why not just two ? If there are three you have no excuse for ever having all your copies in the machine at once, even for updating purposes. Also never update both backups at the same time without checking the validity of the initial copy first.

Now for some impressions of the TI-99 scene. Micropendium (that doesn't sound like a Texas size appendage) continues it's timely appearances. It carries a range of purely TI-99 relevant material of interest to all levels of TI-99 user. Just don't take too seriously the first letter to the editor on any particular technical topic until the later mail has come in. All in all well recommended for a subscription, and far superior to anything that existed in the days when TI still produced the machine.

The Smart Programmer has now reappeared with similar content to that of old, and promise of timelier publication schedules. As it has higher technical pretenses than Micropendium I will judge it accordingly. The first two of the new series are a mixed bag. Previous issues made a big deal of publishing details of the TI ROM code. In fact very little detail appeared of relevance to the assembly programmer in the various maps, that couldn't be found out very quickly, and it never really was much more use than the E/A and Technical Manuals.

A handy reference on occasion but that's about all. If you want to see a real exegesis of the console internals see the TI-Intern book from Germany. Our copy came from Bernie Elsner in Perth. That will will show you how it should be done. I'm sure the Miller's stable have an equally thorough knowledge, but are not prepared to share it.

That's understandable for commercial reasons but I do object to all the hype generated to convince people that the SP is really telling them something. This gap between between hype and reality is characteristic of all the Miller's output, at least on a hard-nosed engineer's judgment of the real utility of the products. Which is not to say that some really high class work hasn't gone into MG's program and gadget output.

The new series carries on the tradition. The second issue contains a dissection of the MINIMEM module which says nothing more than is in the manual possessed by every owner of that module. Big deal ! The other articles are of more interest. The one on disk/cassette load and transfer utilities for machine code program files presents useful programs.

They are about on a par with Will's beginning efforts in this vein, and at least they inspired him to redo the job to Funnelweb Farm standards incorporating his own text-mode machine code file-name editor that he had written for DISKHACKER. It is now on issue as fairware. [CASSTRANS and CASSLOAD from Stephen]. Another article on the TMS-9995 processor was of interest in the "what might and should have been" category (and may yet be if Myarc's machine gets off the ground).

The high point of the issue was a DSRLNK/GPLLNK that used the console routines so that it was shorter even if slower than the usual assembly routine. A quick glance shows 4 bytes could be removed from the GPLLNK, and there must be something I haven't quite cottoned onto in the DSRLNK which allows multiple varied use under error conditions. Not surprisingly it uses indexed addressing to support GROM paging, a fairly reprehensible omission from Funlwriter perpetrated for reasons of code squeezing, but then I don't have any interest in flogging Gramkrackers and always advise people to spend their money on an honest straightforward RAMdisk instead.

The XML used (the eXecute Machine Language escape from the clutches of GPL) is one I have noticed earlier , a freak accidental in a data table near the end of GROM #0. I never would have used it, because I could have had no absolute confidence that this table was precisely the same in all consoles, let alone residing at the same absolute address. The method of searching GROM #0 for a regular

XML is sounder, in the absence of complete knowledge. Now what this article did do that very few individual owners are in a position to do is claim that the routines, which used absolute addresses in the console including this XML, would work on all models of 99/4a produced.

This little gem made the second issue very much better than the first which was mostly a plug for MG's hardware offering - the Gramkracker (a pun that doesn't translate from the American). I don't think I would lay out any money for this gadget as it doesn't seem to do anything that we want to do that wouldn't be done better with Funlwriter and a RAMdisk. I have heard F'wr described as the "poor man's gramkracker".

Combine that with the availability of programs to dump GROM only cartridges and run them from memory expansion with their own GPL interpreter in RAM as well, and there isn't much call for the MG device unless you have money to spare. My advice is to go for a Horizon or Myarc RAMdisk instead. The main item of interest in the first issue was a FORTH article, biased towards Wycove Forth.

I have heard from several sources that the Wycove version is better than TI's, being smaller and faster. The Wycove is a commercial product and has the distinction of being one of the very few machine code programs available from a source other than TI before they orphaned the 99/4a, and probably the best too. I can't comment on the relative merits from personal experience because after a very short flirtation with TI-Forth I rapidly decided that the elegant TMS9900 assembler code was easier to use. When we get back to high level languages it will be with c99, and Pascal if I can ever get the p-system working on DSDD disks.

We have received from France a copy of the TI-Writer disk sold there by TI. This comes up as Version 2.0 on the Editor's end of file message and the Formatter is dated 1983. The disk fully supports the foreign language capabilities. With the version sold here selecting one of the module's language entries would bring up the GROM resident parts (selection screen and SD) in the language selected, but the Editor and Formatter internally were still in English, or what passes for it in word processor prompt lines. In the continental version there are three extra sets of files, a character file for each language with true lower case CHARA1-CHARG1, and a set for each of the Editor and Formatter which contain the commands and prompts in each language.

The bug in Recover Edit that was introduced with the *fix 1 update of Vn 1.0 issued to User Groups by TI has been repaired. I'm not sure what the copyright status of Vn 2.0 is. I have that feeling that if TI had ever imagined that something like F'Wr was possible, which they clearly didn't, that they might never have released *fix 1 of Vn 1.0 to the public domain. I suspect TI don't ever want to be reminded of the existence of the 99/4a but they are a large corporation, from the land of litigation, that can afford lots of lawyers.

There is an incompatibility between the Editor versions also in that tab records written by Vn 1.0 are not recognised as such by Vn 2.0 but print as a line of special characters. The character files have an extra set of entries above #128 for extra screen characters eg for French small characters with accent marks.

I don't know whether they cater for Canadian French. In the absence of a manual I'm not sure how these are entered from the keyboard. That all can be lived with but the reverse problem is more serious - the tab record written by Vn 2.0 locks up Vn 1.0 on the way in. I temporarily lost this file until I went back to TI-Writer and Vn 2.0 and used PF to rewrite the file again without a tab record. As a curiosity the English language version is British rather than American. Seeing as we use # often and pounds sterling but rarely, the American version is more appropriate here in Australia.

Other recent arrivals in the fairware line include PRBASE Vn 2.0 which looks like becoming the database program of choice, and the RAG macro-assembler. [both available from Stephen] .Haven't had a chance to look at either of these in detail yet.

Canada 1

Canada 50

Decoy/Appelant
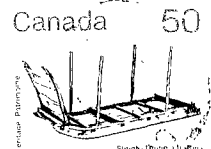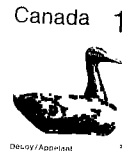
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