Contents

MERRY CHRISTMAS
TO ALL!!!

AND THE
BEST IN THE
NEW YEAR

NEXT MEETING 10 JANUARY 1985

CHAIRMAN'S TWO CENTS WORTH

by Bill Sponchia

General Meeting:

Thanks goes out to Easyware for the demonstration of their database program called DATAMAN. At the meeting they made a special offer to anyone who wishes to buy the program. For those who missed the opportunity at that meeting Easyware have expressed their desire to continue their offer to this meeting as well. The offer is as follows:

Copy of program/Easyware supplies disk.....................25.00

Copy of program/you supply disk............................20.00

Copy of manual... 7.50

For those who wish to take advantage of this offer please leave your name and phone number with me at the January 10th meeting and it will be passed on to Easyware.

Also to be thanked is Bob Picard who not only looked after the arranging of the above demonstration but also put on his own demo of SUPERSKETCH and J.P. Morin for his demonstration of FORTH.

At the next General Meeting (note: TO BE HELD ON JANUARY 10TH) there will be a presentation and demonstration by Mr. David Todd,manager of DATAPAC 3101,Telecom Canada related to Bell Canada. Please note that the presentation will be the first item on the agenda and will start at 7:30 pm.

After the presentation the balance of the meeting will be allotted to the discussion of, and voting on, the proposed Constitution amendment dealling with "Piracy". This amendment was introduced at the last meeting and it is reproduced in this Newsletter.

1985 Membership Dues:

Attached to this Newsletter is the registration form for your 1985 membership dues. For all those who have not already done so please get your dues paid as soon as possible. If you wish to save the postage the forms along with the dues can be given to the Treasurer on January 10th at the General Meeting.

Survey:

Also attached is the Group Survey. If you have not already filled this out please do so at your earliest convenience and return to a member of the Executive. Please be advised that this information is strictly confidental.

Tutorials/Workshop:

I have had very limited response to both the next Beginners tutorial session due to start in January and to the tentative Programming seminar also to be held in January. If there is anyone who wishes to participate in either or both of these please contact me as soon as possible (home number 523-0878).

CONSTITUTIONAL ADDITIONS

The Executive committee recommends to the membership the following additions:

ITEM 13.1...."The Group does not condone nor encourage the pirating of any software by its members.Neither will it knowingly allow any pirated software to be placed into its software library."

ITEM 13.2...."Any Group member who knowingly distributes or receives a pirated copy of any software which was written by another Group member,without that member's expressed permission is subject to immediate removal of all his/her membership privileges."

ITEM 13.3...."Any Group member who deliberately makes copies of any programs from another member's personal library without that member's expressed permission is subject to immediate removal of all his/her membership privileges."

ITEM 13.4...."As the payment of the annual membership fees is an acceptance of the constitution of the Group,removal of the membership privileges due to violation of 13.2 and/or 13.3 is not grounds for a refund of all,or a portion of the paid membership fees."

ITEM 13.5...."It being that a membership in the Group by one member entitles all people in the household the same privileges the removal of membership privileges from one household member will automatically remove the membership privileges from all household members."

ITEM 13.6...."The procedure to be followed for alleged violations of 13.2 and/or 13.3 are:

i)A complaint must be submitted in writing,to one or more members of the Executive,giving the nature of the alleged violation,the accused's name(s) and the complainant's name(s),telephone number and membership number.

ii)The accused member(s) will be notified of the complaint by an Executive member.

iii)The Executive committee will appoint a 3-person adhoc committee to hear the complaint.

iv)An adhoc committee meeting will be convened as quickly as possible(preferably within 7 days) to which the complainant and the accused will be asked to attend. They may in turn invite witnesses.

v)The adhoc committee will hear evidence,ask questions as it deems necessary and render its decision.

vi)The decision maybe appealed to the Executive committee."

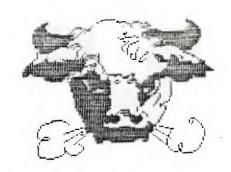ITEM 13.7...."The expelled member may not reapply for membership for a period of not less than 12 months."

Well at long last here is the concluding part of the explanation of the 79 FORTH conversion screen. In the first 2 parts, I explained how the short definitions were created and also how the very lengthy one for ROLL was created. In this part I will explain the other definitions such as PICK,DEPTH, etc...

DEPTH is a word which leaves on the top of the stack the count of how many words are already on the stack. As this word is not found in fig versions of Forth it can be created by using the definition on p. 83 of Brodie's Starting Forth with the modification shown in the TI Forth Manual. PICK is a 79 word which is somewhat similiar to the word ROLL which we covered in the last article. The difference is that while n ROLL moves the nth number to the top of the stack n PICK copies the nth number onto the top of the stack. Here is how the definition of PICK works. The 2 * muliplies the number by 2 to create an index for how far n is down from the top of the stack. Then the words SP + add the adrress index of the number to the number of the address returned by the SP word which moves the address of the stack pointer to the top of the stack. The final step in the definition is the word which is like CALL PEEK in BASIC since it relaces the address which is now on top with the contents of the address which is the number on the top of the stack. There is also a word in the conversion program called WORD. This word is found in both versions of the language and performs the same function in each. It reads in a list of text characters from the input stream. For further details see TI-FORTH manual Glossary, at p.65. However the difference is that the fig version leaves nothing on the stack while the 79 version leaves the memory address of the length byte of the string on the top of the stack. I leave it to you to figure out how my definition does this...

For those of you who want to learn more about FORTH, I suggest you come to our Forth sub-group sessions. The next one will be held in January with time and place to be announced. Jean-Pierre Morin who has written an excellent 3-D graphics program will be there as well as many others. Well a Merry Christmas and a Happy New Year to all. See you all next month.

```
********************************************************************
*                          TRADING POST                          *
*                          -----------                           *
*                                                                *
* 1.WANTED;MINI-MEMORY MODULE;CONTACT PETER ARPIN.............523-0017 *
*                                                                *
* 2.WANTED;SSSD USED DISK DRIVE;CONTACT BOB BOONE............623-7841 *
*                                                                *
* 3.WANTED;VOICE SYNTHESIZER;CONTACT CLIFF PROCTOR...........824-0056 *
*                                                                *
* 4.WANTED;DISK CONTROLLER CARD;CONTACT LESLIE SHOREY........820-6319 *
*                                                                *
* 5.FOR SALE;TI MINI-MEMORY MODULE.$100.00;CONTACT BRUCE CARON.733-7675 *
*                                                                *
* 6.FOR SALE;TI INVADER MODULE......$10.00                       *
*           TI CAR WARS MODULE.....$10.00                        *
*           TI ALIGATOR MIX MODULE.$10.00                        *
*           TI STORY MACHINE MODULE$10.00                        *
*           TI ZERO ZAP MODULE.....$10.00;CONTACT BOB BOONE...623-7841 *
*                                                                *
*                                                                *
*                                                                *
*                                                                *
********************************************************************
```

EDITOR COMMENTS

Well I was going to talk about software piracy...juicy stuff but 'tis not the season as Christmas is upon us again so I'll save that one for 1985. I'd like to end the year on a happy note and keep you up to date on all the latest scuttlebutt.

No news as of yet from the IUG down in Oklahoma,wonder whats going on? A beautiful color catalog from TRITON of SAN FRANCISCO was found in our mail box this month as most people were happy to discover,they are still making things out there for TI99/4a!!!!Supposedly there are 25 EXTENDED BASIC MODULES in stock at the COMPU CENTER STORE right here in OTTAWA...can you believe that? Mr.DISKETTE has the DX-85 which hold a 100 diskettes on for $19.95 and diskette prices themselves have dropped below $16.00 per box of ten!!!COMPU CENTER selling MULTI-PLAN for $50.00 and how about ADDISON of MONTREAL selling our new keyboards for 8.00,power supply card for the 4a for 7.00 and the power transformer for 6.00. All kinds of connectors and cables too! The rf modulator, only $4.00. The power supply works well even though it wired to US specs,the keyboard is ok,only the alpha lock not functioning but that won't stop me from getting another one.

CORCOMP is still kicking,and our interview didn't come off as planned because JACKIRAE wasn't there...and a new version of the DISK MANAGER 2.3 is available for the 9900DCC and it looks like the big expansion system is back on the drawing board again...not compatible with TI plug-in cards...doesn't sound serious. So instead of an interview with CORCOMP we phoned MILLER GRAPHICS and talked to Joe as Mr.Miller was not prone to giving interviews. Support for the 4a is continuing and will continue due to very active users(JULY issue of MG newsletter is making the rounds).No TI clones yet..if they exist they are still under wraps. New projects planned are a RAM card and some software along the diagnostic lines. 80 column card is not forth coming as the chips are not available yet. DATAPAC/UMBBS is losing its funding and is now appealing to users to provide funds in the form of user fees as this seems to be the way all BBS eventually go I wonder if this was planned from the start as it seemed too good to be true. None the less it is the only way go and speak to anyone who uses it and they are in favour of a National BBS.

No other new rumours....and thanks to JOE of MG and to BRUCE who did the interview as my voice wasn't up to scratch. It has been a good year for the TI99/4a and its users and all things considered it should be even better in 1985 and speaking of 1985, we have to dig deep and come up with our annual dues which are due in January.....HAPPY HOLIDAYS

Paul Berlinguette

A LOOK AT INTERRUPTS by R. A. Green

In an earlier article on sprites interrupts were mentioned. This article looks at interrupts in some more detail. A short program is given that demonstrates how they can be used.

First, what is an interrupt?

To answer this question let us look at an analogous situation. You are sitting reading this article; the phone rings; you stop reading, remembering where you are and answer the phone; then you hang up the phone and return to your reading just where you left off. You were "interrupted" in your reading.

The same sequence of events happens in your TI 99/4A. The CPU <you> is executing a BASIC program <reading this article>; an interrupt from the VDP occurrs <the phone rings>; the CPU stops executing the BASIC program, saving its current status and position and executes the VDP interrupt service routine <answers the phone>; then completing the interrupt routine it returns to the BASIC program at exactly the point where it left off <you return to reading>.

Thus, an interrupt is a signal that some important event has happened. The TI 99/4A has two types of interrupts or event signals.

The first type comes from the input/output devices. These interrupts are used by the routines on the device ROMs.

The second type comes from the VDP. The VDP signals an interrupt to the CPU every 1/60th of a second. This interrupt can and is used as a timer in the TI 99/4A. There are at least two functions in BASIC that require a timer: sound processing (CALL SOUND specifies a duration for the note), and sprite movement (a speed is specified).

The VDP interrupt service routine in the console ROM does the timing for these two functions. It turns the sound generator off or moves a sprite when it is time to do so. The ROM interrupt service routine will also execute a user interrupt routine if one is present.

An Assembler Language programmer can make use of this feature. The presence of a user interrupt routine is indicated by placing the routine's memory address at location >83C4 hexadecimal or -31804 decimal.

The following BASIC program demonstrates the use of a user interrupt routine. The program can be run using TI BASIC with either the Mini Memory or Editor/Assembler module, or can be run using Extended BASIC. Using Extended BASIC or the E/A module requires the memory expansion unit or card.

BASIC LISTING

```
100 REM   INTERRUPT DEMO
110 REM
120 REM   MACHINE LANGUAGE
130 REM   ROUTINE LOADED AT
140 REM   >2600 EXTENDED MEM
150 REM   >7200 MINI MEMORY
160 REM
170 CALL INIT
180 XM=9728
190 MM=29184
200 LAD=XM
210 REM   TEST FOR EXT MEM
220 CALL LOAD(XM,170)
230 CALL PEEK(XM,X)
240 IF X=170 THEN 270
250     REM   MUST BE MINI MEM
260       LAD=MM
270 A=LAD
280 REM   LOAD ML ROUTINE
290 CALL CLEAR
300 FOR D=540 TO 630 STEP 10
310     CHECK=0
320     FOR N=1 TO 10
330         READ X
340         CALL LOAD(A,X)
350         CHECK=CHECK+X
360         A=A+1
370     NEXT N
380     READ X
390     IF CHECK<>X THEN 490
400 NEXT D
410 REM   POKE INTERRUPT
420 REM   ROUTINE ADDRESS
430 REM   INTO >83C4
440 CALL LOAD(-31804,LAD/256)
450 REM   JUST IDLE AWAY TIME
460 FOR N=1 TO 10000
470 NEXT N
480 STOP
490 PRINT "ERROR IN DATA STATEMENT ";D
500 STOP
510 REM   EACH DATA STATEMENT
520 REM   HAS 10 DATA BYTES
530 REM   AND A CHECK SUM
540 DATA 192,236,000,092,004,194,005,131,002,131,987
550 DATA 000,060,026,003,004,195,006,236,000,094,624
560 DATA 203,003,000,092,060,172,000,090,006,002,628
570 DATA 017,015,019,010,006,002,019,004,002,000,94
580 DATA 002,039,010,083,016,002,002,000,002,086,242
590 DATA 096,003,016,007,002,000,000,119,010,083,336
600 DATA 016,002,002,000,000,072,160,003,002,096,353
610 DATA 064,000,006,192,215,192,006,192,215,192,1274
620 DATA 016,000,216,044,000,094,140,000,004,091,605
630 DATA 000,015,000,000,138,128,000,000,000,000,281
```

Let's have a quick look at the program.

180   XM is the address of the user interrupt routine if
the extended memory is present.

190   MM is the address of the user interrupt routine if
the Mini Memory is present.

220-240 the presence of the extended memory is determined by
poking a value into it, then PEEKing to see if that
value is there. If the extended memory is not there
PEEK will return a zero.

300-400 reads the DATA statements and pokes the machine
language user interrupt routine into memory.

440   pokes the address of the user interrupt routine into
addres >83C4, thus making it active.

460-470 is an idle look so you can see the display created by
the interrupt routine.

540-630 these DATA statements are the machine language
interrupt routine. Each DATA statement has 10 bytes
of program and a check sum. If you mistype one of
the values you will get a message at statement 490
when the program is run.

The display created by the interrupt routine consists of a
box drawn with asterisks. One asterisk is placed on the
screen every interrupt (i.e. every 1/60th of a second).
There are 60 asterisks in the box so that the box is
completely drawn in one second. After drawing the box it is
erased in the next second by writing blanks instead of
asterisks.

You will note that the display continues even after the idle
loop at lines 460 and 470 completes. And in fact, it will
continue even while doing other things in BASIC. Try listing
the program, or entering a new one.

Finally, for those who understand assembler language, a list
of the assembler source program for the interrupt routine
follows the BASIC listing.

ASSEMBLER LISTING

```
*          INTERRUPT DEMO
*
* CALLED BY ROM INTERRUPT ROUTINE
* WITH GPL WORKSPACE AT >83E0
* R11 = RETURN ADDRESS
* R12 = ADDR OF THIS ROUTINE
* R13 = >9800 GROM READ DATA
* R14 = SYSTEM FLAGS
* R15 = >8C02 VDP WRITE ADDRESS
*
* THIS PROGRAM IN SELF RELOCATABLE
*
USRINT MOV   @T(R12),R3    GET TICK COUNTER
       CLR   R2            SET R2,R3 FOR DIVIDE
       INC   R3            COUNT TICKS
       CI    R3,60         ONE SECOND?
       JL    TOK           JUMP NO
       CLR   R3            WRAP FROM 60 TO 0
       SWPB  @C(R12)       AND SWAP SCREEN CHARS
TOK    MOV   R3,@T(R12)    SAVE NEW TICK COUNTER
       DIV   @F(R12),R2    DIVIDE INTO 4 QUADRANTS
       DEC   R2            R2 HAS QUADRANT 0 TO 3
       JLT   Q0            JUMP IF QUAD 0
       JEQ   Q1            JUMP IF QUAD 1
       DEC   R2
       JEQ   Q2            JUMP IF QUAD 2
Q3     LI    R0,551        LEFT SIDE GOING UP
       SLA   R3,5          Q3=551-32*REM
       JMP   QS
Q2     LI    R0,598        BOTTOM GOING LEFT
QS     S     R3,R0         Q2=598-REM
       JMP   OUT
Q1     LI    R0,119        RIGHT SIDE GOING DOWN
       SLA   R3,5          Q1=119+32*REM
       JMP   QA
Q0     LI    R0,72         TOP GOING LEFT
QA     A     R3,R0         Q0=72+REM
OUT    ORI   R0,>4000      VDP WRITE BIT
       SWPB  R0
       MOVB  R0,*R15       SET VDP ADDR FOR WRITE
       SWPB  R0
       MOVB  R0,*R15
       NOP
       MOVB  @C(R12),@>8C00 CHAR TO VDP
       B     *R11          RETURN TO ROM ROUTINE
F      DATA  15            # CHARS PER QUADRANT
T      DATA  0             TICK COUNTER
C      DATA  >8A80         '* ' CHARS FOR DISPLAY
       END
```

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 corse 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 of course improve the coding. Please respect normal hours unless you specifically know that someone doesn't mind a call at 3 AM or use the BBS to leave a message at 738-0617.

BILL SPONCHIA.....CHAIRMAN.....TUTORIALS,B,XB............(M)523-0878

BERRY MINUK.......V/CHAIRMAN...TUTORIALS.B,XB,ASL,F......(M)234-5472

JOHN ALTORIO......TREASURER....FINANCES.B,XB,Mmp,L.......(M)224-8440

JANE LAFLAMME.....SECRETARY....RECORDS,BBS,B,XB,Mwp,Lb,Lc(M)837-1719

BOB BOONE.........P/CHAIRMAN...U/G CO-ORD,Ld,I,S,SS......(M)623-7841

BRUCE CARON.......SYSOP........BBS,ASL,I,R..............(M)733-7675

PAUL BERLINGUETTE.EDITOR.......NEWSLETTER,R,I,Lb.........(M)741-6175

TONY HOPKINS......ADVERTISING..Ld,Lb.....................746-4463

CLIFF PROCTOR...................Mp,S....................(M)824-0056

ART GREEN.......................ASL.....................837-1955

SOFTWARE:::ASL=ASSEMBLY   LANGUAGE,B=BASIC,F=FORTH,L=LOGO,Lb=BOOKS/ MAGAZINES,Lc=CASSETTE LIB.,Ld=DISK LIB.,M=MODEM,   Mp=PLATO,Mea=EDITOR ASS.,Mmm=MINI MEM.,Mmp=MULTIPLAN Mwp=TI WRITER,S=SALES,XB=EXTENDED BASIC.

HARDWARE:::I=INSTALLATION,R=REPAIR,SS=SALES.

FLASH FLASH FLASH::::::COMPUCENTER is not taking anymore orders for MULTIPLAN maybe in the New Year and there are only 15 Extended Basic Modules left in stock.......TVM

     In the first part of the article, on the diskette, I stated
that a double density diskette is formated with 80 tracks per
side. In fact the diskettes used with the TI are 40 tracks per
side. A single density diskette has 9 sectors per track, while
a double density format uses 18 sectors per track.

MURPHY'S LAW #516 Part 2 "DISK FIXER"   by Bruce Caron

     Before we get into examining any of the sectors on a disk I
thought it would be a good idea to review the commands and the
conventions used in the Disk Fixer Program. Also some of you
may have the original version 1.0 and I will be using version
2.0 so I will mention the differences between the two.

Commands Version 1.0   Commands Version 2.0

R   sss,d   (Read sector)   R   sss,d   (Read sector)
P   sss,d,n   (Print sector)   P   sss,d,n   (Print sector)
W   sss,d   (Write sector)   W   sss,d   (Write sector)
A   0000   (Alter Data)   A   0000   (Alter data)
D   (Display buffer)   D   (Display buffer)
M   (Inspect/Change)   M   (Inspect/Change)
H   (Help-Show options) H   (Help- Help menu)
Q   (Quit)   Q   (Quit)
                                   C   (display current-
                                                    sector)
                                   F   sss,ees,d(Find Character-
                                                    String)

Disk Fixer Conventions:

     ALL NUMBERS ARE ENTERED IN HEX. * see note.

     sss - Refers to STARTING sector. This parameter is optional
           for some commands, and if not used, the function that
           is being performed will use the CURRENT sector.

     ees - Refers to ENDING sector.

     d   - Refers to disk number. Optional, defaults to the last
           disk entered.

     n   - is the number of sectors.

     0000- Address 0000 is the address offset of the data. This
           value is always entered in HEX and is relative to 0.

Note: Most computer books usually have conversion tables to go
      from HEX to DEC and back. The Editor-Assembler manual
      discusses HEX arithmetic. For those that do not have any
      conversion tables, there is a HEX/DEC program written in
      Extended Basic in this months newsletter.

R - READ SECTOR   Enter R sss,d
Reads a sector into VDP RAM BUFFER at locations >1000V to
>10FFV. The contents of the sector is displayed on the
screen in Hex.

    Example :   R 10F,1

Reads sector 271 from disk drive 1 into the VDP buffer.

P - PRINT SECTOR   Enter P sss,d,n
Dumps sectors to the printer. The LIST device is requested
the first time this function is used. Enter your printer
option or press enter to use the default value of RS232.BA
=9600.

    Example :   P 10F,1,3
                  LIST DEVICE. PIO

Prints 3 sectors, starting from sector 271 to the list
device.

F - FIND STRING   Enter F sss,eee,d
Searches disk (d) from starting sector to end sector for
1st occurance of character string. The prompt ENTER SEARCH
STRING is displayed, enter up to 30 characters.

    Example :   F 1,FD,2
                  ENTER SEARCH STRING. Nav

Searches sectors starting from sector 1 to 253 for the 1st
occurance of the character string "Nav".

A - ALTER DATA
Use this to alter the data on a disk. The sector to be
altered must first be READ into the buffer, with the (R)
command. Once data is in the buffer, alter it with this
command, then WRITE it back to disk with the (W) command.

    Example :   A 0000 displayed 3030

Change the data by entering a new WORD in HEX. Use spacebar
to advance to the next WORD or press ENTER to terminate.
Then WRITE it back to disk with the (W) command.

M - MEMORY INSPECT/CHANGE   Enter M aaaa [v]
Used to inspect RAM or VDP RAM and is identical to the
syntax used by the TI-DEBUGGER. aaaa=address in RAM, V=VDP.

    Use this function to display ascii buffer in VDP RAM at
    location >1000V to >10FFV.

    Example :   M 1000V,10FF

Displays VDP buffer on screen.

MINI-CONTEST WITH MYSTERY PRIZE ?
Identify what this program does and write it down on a piece
of paper, along with your name. Bring it to the next general
meeting and drop it in the box. The first name drawn with the
correct answer wins the mystery prize.

```
10 FOR A=1 TO 20
20 FOR B=A TO 20
30 LET C=SQR(A*A+B*B)
40 IF C<> INT(C) THEN 60
50 PRINT A;" ";B;" ";C
60 NEXT B
70 NEXT A
```

```
100 CALL CLEAR :: PRINT TAB(10);"MINI CALC":: ::!BRUCE CARON-JUNE 1984
110 PRINT "CONVERSION PROMPTS": :
120 PRINT "HEXADECIMAL TO DECIMAL: >   DECIMAL TO HEXADECIMAL: ."::  ::
130 PRINT "ENTER CONVERSION PROMPT THENENTER NUMBER (NO SPACES).":: ::
140 HEX$="0123456789ABCDEF"
150 ON ERROR 190 :: PRINT :: INPUT "ENTER NUMBER: ":NUM$
160 A$=SEG$(NUM$,1,1):: NUM$=SEG$(NUM$,2,LEN(NUM$)-1)
170 IF A$="." THEN 200
180 IF A$=">" THEN 260
190 PRINT "INVALID ENTRY...TRY AGAIN" :: GOTO 150
200 DT=VAL(NUM$):: IF DT<32768 THEN 220 !DEC TO HEX
210 DT=DT-65536
220 K=DT :: L=DT :: NUM$=""
230 FOR Y=4 TO 1 STEP -1 :: K=INT(K/16) :: H(Y)=L-K*16 :: L=K :: NEXT Y
240 FOR Y=1 TO 4 :: NUM$=NUM$&SEG$(HEX$,H(Y)+1,1):: NEXT Y
250 PRINT "...........   >"&NUM$ :: GOTO 150
260 IF LEN(NUM$)=4 THEN 280 !HEX TO DEC
270 NUM$="0000"&NUM$ :: Y=LEN(NUM$):: NUM$=SEG$(NUM$,Y-3,4)
280 K=12 :: DEC=0
290 FOR Y=1 TO 4 :: H(Y)=POS(HEX$,SEG$(NUM$,Y,1),1)-1
300 DEC=DEC+H(Y)*2^K :: K=K-4 :: NEXT Y
310 IF DEC<32768 THEN 320 :: DEC=DEC-65536
320 PRINT "...........   ."&STR$(DEC):: GOTO 150
```

PRIOR PATTERNS By Bob Boone

This article will concern itself with methods I've used to maintain my library over the last two years... My library has undergone some massive upheavals over that period of time: in content, size and modus operandi.

For a period of about 14 months after purchasing my TI, I used an old Panasonic cassette recorder(without a revolution counter) to store and load my software. If you are planning to run for any length of time by cassette tape I heartily recommend you don't do as I did, but do as I say! Here we go! First of all, for your own sanity, get yourself a late model Panasonic portable cassette recorder(the one with the little orange record button) or a TI cassette recorder. Experience has shown that either of these machines will successfully playback virtually any cassette-based software for our TI. My old-model Panasonic worked beautifully on my system, but my software was not portable unless my recorder was ported beside it! Our NICS Computer Club has found that a playback volume level of 8 and tone level of 5 will recover most software stored on cassette(these levels as quoted are for the newer model Panasonic recorder mentioned earlier) Minor, but frustrating, adjustments of either volume or tone levels are sometimes required, but patience and persistance won out in nearly every case I can recall. I can vividly remember the time Paul Berlinguette spent one and a quarter hours playing and replaying a tape, before finally succeeding in loading it.... only to learn he'd have to load one more time as the program was written in extended basic and he was in TI basic! What fun!!! My second recommendation is that you stay away from any tape longer than 30 minutes playback time. I used 10 minute tapes and not only because I had no revolution counter. Long tapes strreeettch more and tend to wind at varying tightnesses at different parts of the tape. This causes problems over and above others inherent in cassette operations. No one needs that! You can get 2 large programs per side on a ten minute tape or 6/side on a 30 minute one. This is a manageable number of programs to document on the casing of the cassette rather than have to include a slip of paper/cassette and also keeps fast-forwarding and fast stopping to a minimum. Its these last two actions that stretch a tape more than any other. Remember.... IF A TAPE STRETCHES ENOUGH...YOU WILL BEGIN TO LOSE PROGRAMS!!!

In a cassette operation it's of some importance to you to know what language the program is written in(remember Paul's dilema above) I solved that problem to some degree by altering each program(whenever possible) so that it would run in both languages.

The fourth and final piece of advice I have for cassette operators, is mainly for those that plan to stick with our exciting and powerful little orphan....switch to disk drive as soon as you can possibly afford it! Its worth its weight in gold and will immeasurably increase your pleasure!!!

Over the first 14 months I owned my computer(up until the time I took the plunge to the expansion box) I had garnered a library of just under 200 programs. From late November last year until now my library has increased by more than 1000 percent!!! I topped the 2000 mark in mid December this year. I had those cassette programs all on disk within 3 days of possessing my disk drive and suddenly had the world by the tail! I had more time to enjoy my then-impressive library(in fact: far more time then, than now!). The thing I enjoyed most about that period just after switching to DOS was the new(but sadly too short-lived) time to explore Tex's power. I wrote more software then than before or since and enjoyed every minute in front of my console. We've a powerful tool here whether you know it or not!

Cassettes do have one small, but not inconsequential, advantage over .sks. You need to be very careful with diskettes that you do not touch the wafer inside the diskette cover. One little slip-up or invisible speck of dust can ruin an entire diskette! Take extra care and put the diskette back in its envelope when not actually in the drive and your problems should be minimal or non-existant. Believe me....its worth the little extra effort!!!

    Disk operation has several major advantages over cassette operation that make its aquisition highly desireable as soon as possible. The primary inducement is speed of access. You also gain portability; immediate random access to several programs at the touch of a key and a built-in management system. How can you lose? If I had it to do again I'd do it sooner! For large database or library management two drives are nice to have but at least one is an absolute necessity. Using a Disk Operating System (DOS) makes it possible to finally and easily begin to sort your holdings. My initial breakdown was: Games; Computer Aided Instruction(CAI); and Mixed. 'Mixed' very quickly broke down to Utility, Music and Mixed. CAI has since given birth to sub-units of Miscellaneous CAI and Math CAI. This form of breakdown makes sorting software very easy and less arbitrary than the a more detailed breakdown would. My advise here is to keep it simple; thus more manageable. TI-DOS allows use of up to 10 characters to define your program....whenever possible, use the actual program name. If you can't do that then at least use all ten characters and come as close as you can to the program name or describe it somehow(eg: call SLOT MACHINE;SLOTMACHIN or 1ARMBANDIT). If a program fits properly in two of your predefined catalogs my suggestion is DON'T duplicate it but try to decide which it most belongs to and put it there. Duplication of any kind is an abhorent waste of disk space to me....with one exception...always back up a personal data disk and keep it someplace safe and out of the way. Use friends or a local librarian as your back-up in all other cases and use your liberated diskspace for new stuff. Diskettes vary widely in price here in the Ottawa area(generally from a low of $16 to a high of near $50 per box). Guarantees are basically the same throughout the entire range so my recommendation is stay at or near the low end and rely on the guarantee. Another tip: try using a SSSD disk as a DSSD or DSDD before you spent the extra on one thats been tested in your desired format. If it initializes ok it should be satisfactory forever if you're careful. Flippies are also a possibility for considerable savings but need more elaborate care especially in labeling and sorting operations. I've had both good and bad experiences with flippies and generally don't recommend their use. I must admit though that they're a necessary valuable tool when trading abroad with other User Group librarians...I caution again that flippies can work if extra care is taken with them and in making them.

    SOAP BOX TIME: It has been said (and rightfully so, I'm afraid) that our UG services, including this newsletter, are too slanted toward our users with a fairly well-developed system in their homes. The tutorials we're offering are broad-based but for whatever reason little-used and we hope to extend extensive library software to you all but one huge fact glares out to me... Every executive member you've elected has a full-blown system and cassette users within the group are conspictuously lacking from every committee in the club. You don't, as a rule, attend meetings or contribute articles or even suggestions for articles to the newsletter. We WANT to serve you and offer you extra perks, but don't know what you want. Give us input or at least a sign of continued interest in the group..we were all cassette-based once! One final note: my door is open(albeit in Arnprior) to cassetters and diskers(if you're a cassetter you'll need your recorder). Come out to visit sometime!!! Call 623-7841 first to ensure I'll be home and available. TAKE CARE TILL NEXT TIME AND KEEP ON TI-ING.....BOB BOONE