
ISHUG

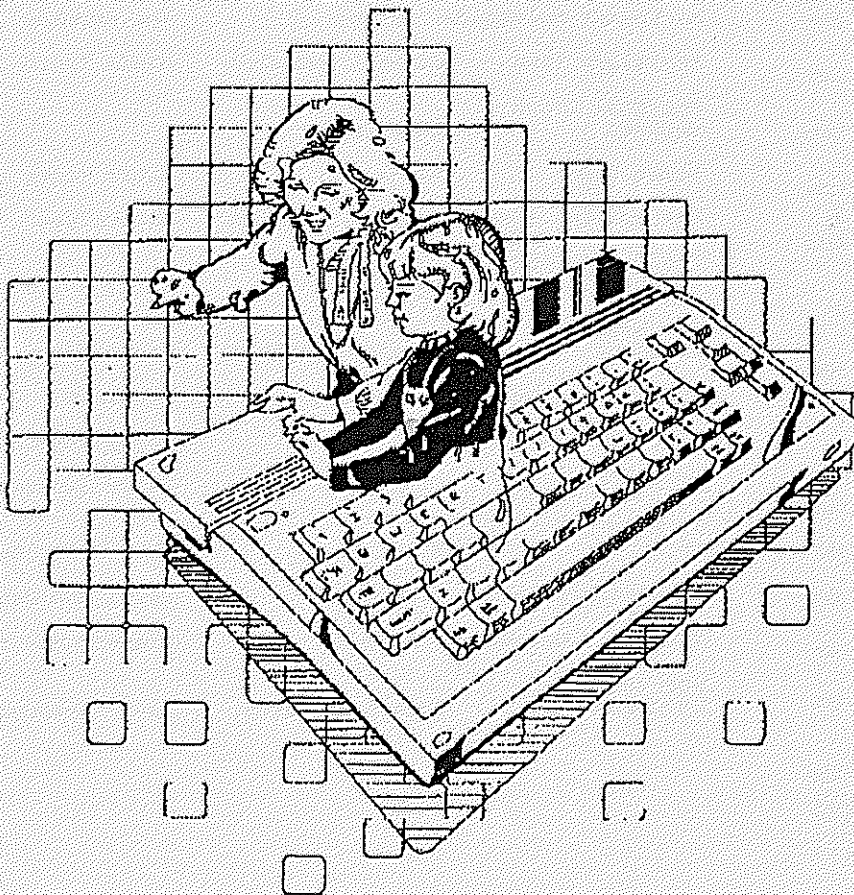
NEWS DIGEST

Focusing on the TI99/4A Home Computer

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More Articles Needed

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TiSHUG Sydney Meeting

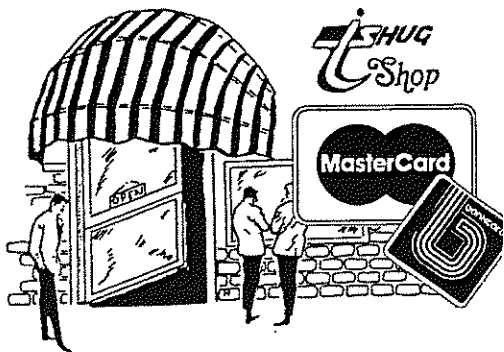
The July Meeting will start at
2.00 pm on the 7th August 1993
at Ryde Infants School,
Tucker Street, Ryde.

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TISHUG SHOP

with Percy Harrison

Well I wonder how many of our members read my article under "TISHUG SHOP" last month and decided that it was time for them to write a contribution to the magazine and send it to our editor, Bob Relyea. Let's flip through this issue and see if there are any contributions from members who have not submitted anything for the last twelve months or longer. If you do not see any new names, or more importantly, your name, associated with any of the articles then maybe it is time that you put your word processing program to good use or if you do not have a printer put pen to paper and create an article for the magazine. As I have said before, it does not have to be a lengthy story but just a small incident or problem that you have experienced while using your TI that could be of interest to other members.

I am aware that two of our members, Ian and Jacob, both have Ramcards and both have had problems with them in recent months. I am sure that other users of Ramcards would like to hear of the types of problems that they experienced and the amount of time that they spent trying to overcome these problems before calling for technical help. It is this type of information that will encourage other owners of Ramcards to seek help with their problems rather than waste time trying to remedy the problem themselves and becoming unduly frustrated with the card and perhaps their system.

I wonder how many of our members realise how fortunate we are to have a member like Geoff Trott in our club, his unrelentless devotion to undertaking the repair of the hard to fix equipment problems is what keeps a lot of our TI owners consoles and hardware up and running. While I endeavour to carry out repairs to most of the equipment returned for service there are times when I am unable to detect the problems and fix them and this is when they get passed on to Geoff who has the expertise and equipment to diagnose the problem and in almost every case fix it. To Geoff go our sincere thanks for his devotion to the club and the excellent service he has given to its members and we trust that he will continue to offer this service for as long as we have TI members in our club.

The attendance at the July meeting was about average and it was good to see one of our original members, John Paine, turn up and

dabble with the IBM compatible computers that were set up in the school staff room. While I am on the subject of IBM compatibles, I would like to point out that our membership is now down to about 100 paying members and the shop sales have dropped off to a point where our total income does not cover our expenses so in order to remain a viable club we must encourage the IBM compatible users to join our club and offer them a similar service to that which our TI owners enjoy. To this end we will shortly introduce an availability of Fairware programs and take orders for compatible hardware which we hope we can offer at below market prices. Please watch this column for further developments on this subject.

In order to reduce our stockholding we have dropped the prices of a number of our hardware items so you may want to browse through the list below to see if there is anything that you can add to your system while they last.

CLUB HARDWARE.

5.25 in. DSDD Disks (Boxes of ten)	.....\$6
5.25 in. HD Disks (Boxes of ten)	.....\$10
3.5 in. DSDD Disks (Boxes of ten)	.....\$10
5.25 in. DSDD Half Height Drive (New)	.....\$35
12 Volt AC Transformer	.....\$4
13 Volt Arlec Transformer	.....\$12
8.5, 17 Volt Transformer	.....\$25
60 VA Transformer	.....\$20
MFC Printed Circuit Board	.....\$30
MFC Kit (Disk Controller)	.....\$103
Music Kit with PCB	.....\$65
32K Memory PC Board	.....\$7
Horizon Ram PC Board	.....\$45
Horizon Ramdisk Basic Kit	.....\$35
Funnelweb Eprom Set (3 Eproms)	.....\$36
TI Artist Eprom Set (2 Eproms)	.....\$24
32K Static Ram IC (62256)	.....\$10
8K Static Ram IC (6264LP)	.....\$5
Exchange Console	.....\$30
ROS Version 8.14	.....\$12
Mini Master 99	.....\$70
Mini PE RS232/32k Card	.....\$80
Mini PE RS232/PIO PC Board	.....\$30
Mini-mem Battery	.....\$3.50
Modulator UHF or VHF	.....\$15
TI Power Supply	.....\$25
TI 32K Memory Card	.....\$40
RS232/PIO Card	.....\$80
Modem PE Card (300 Bd)	.....\$40
PE Expansion Box with I/F	.....\$150
PE Ramdisk (184k Eprom)	.....\$140
PE Ramdisk (248k Horizon)	.....\$170
PE Ramdisk (320k Horizon)	.....\$210
Printer (Serial)	.....\$100
Thunderer Modem with Viatel Cart	.....\$100
Standalone Disk Drive	.....\$30

Packaging and postage extra on all items.

Bye for now.



Tips From the Tigercub No70

Tigercub Software
156 Collingwood Ave.
Columbus, OH 43213

I still like to program "brain games".
Here is one of the most devilish of all.

```
100 DISPLAY AT(2,3)ERASE ALL:"THE FORE AND AFT PUZZLE":  
": Try to get the numbers in the lower half and the  
letters in the upper half."  
110 DISPLAY AT(8,1):" You can move horizontally or vert  
ically to the vacant square or jump over one space to  
the vacant square."  
120 DISPLAY AT(12,1):"but numbers can only move right  
and down, letters can only move left and up!"programmed  
by Jim Peterson  
130 DISPLAY AT(16,1):" Type the number or letter to mov  
e or FCTN 8 to start over or FCTN 7 for a demo."  
140 DISPLAY AT(20,1):" It can be done in 46 moves but pr  
obably not in more than 46 because you will getstuck."  
150 DISPLAY AT(24,8):"PRESS ANY KEY" :: DISPLAY AT(24,8)  
:"press any key" :: CALL KEY(O,K,S):: IF S=0 THEN 150  
160 CALL CLEAR :: CALL COLOR(0,16,16,3,16,5,4,16,5,5,16,  
7,6,16,7,9,2,2,12,16,16):: CALL SCREEN(2)  
170 AS=RPTS("","9):: GOSUB 330 :: GOSUB 340 :: VS="12345  
678ABCDEFH"&CHRS(1)&CHRS(6)  
180 CALL CALLKEY(24,1,VS,CS) :: V=ASC(CS)<65 :: IF CS=CHR  
(6)THEN GOSUB 330 :: GOSUB 340 :: GOTO 180  
190 IF CS<>CHRS(1)THEN GOSUB 220 :: GOTO 180  
200 GOSUB 330 :: GOSUB 340 :: FOR W=1 TO 46 :: CS=SEG$(  
A87AC63CFGB7FBE635F21ABEH87D354BED21CDG54GH21H",W,1):: V  
=ASC(CS)<65 :: GOSUB 220 :: NEXT W  
210 FOR D=1 TO 500 :: NEXT D :: GOSUB 330 :: GOSUB 340 ::  
GOTO 180  
220 FOR J=3 TO 7 :: P=POS(M$(J),CS,1):: IF P=0 THEN 230  
ELSE X=J :: J=7 :: GOTO 240  
230 NEXT J  
240 IF V=-1 THEN 260 :: T=X-1 :: GOSUB 290 :: IF F=1 THE  
N F=0 :: RETURN ELSE T=X-2 :: GOSUB 290 :: IF F=1 THEN F  
=0 :: RETURN  
250 T=P-1 :: GOSUB 310 :: IF F=1 THEN F=0 :: RETURN ELSE  
T=P-2 :: GOSUB 310 :: IF F=1 THEN F=0 :: RETURN ELSE 28  
0  
260 T=X+1 :: GOSUB 290 :: IF F=1 THEN F=0 :: RETURN ELSE  
T=X+2 :: GOSUB 290 :: IF F=1 THEN F=0 :: RETURN  
270 T=P+1 :: GOSUB 310 :: IF F=1 THEN F=0 :: RETURN ELSE  
T=P+2 :: GOSUB 310 :: IF F=1 THEN F=0 :: RETURN  
280 CALL SOUND(500,110,0,-4,0):: RETURN  
290 IF SEGS(M$(T),P,1)<>"c" THEN RETURN  
300 M$(T)=SEGS(M$(T),1,P-1)&CS&SEGS(M$(T),P+1,255):: M$(  
X)=SEGS(M$(X),1,P-1)&"c"&SEGS(M$(X),P+1,255):: GOSUB 340  
:: F=1 :: RETURN  
310 IF SEGS(M$(X),T,1)<>"c"THEN RETURN  
320 M$(X)=SEGS(M$(X),1,T-1)&CS&SEGS(M$(X),T+1,255):: M$(  
X)=SEGS(M$(X),1,P-1)&"c"&SEGS(M$(X),P+1,255):: GOSUB 340  
:: F=1 :: RETURN  
330 M$(1),M$(2),M$(8),M$(9)=AS :: M$(3)="123~~~~" :: M  
$(4)="456~~~~" :: M$(5)="78cAB~~~" :: M$(6)="~~~~CDE~  
~~" :: M$(7)="~~~~FGH~~~" :: RETURN  
340 FOR J=8 TO 16 :: DISPLAY AT(J,10):M$(J-7):: NEXT J ::  
RETURN  
350 SUB CALLKEY(R,C,VS,Ks)  
360 CALL HCHAR(R,C+2,30):: FOR T=1 TO 3 :: CALL KEY(O,K,  
S):: IF S<>0 THEN 390  
370 NEXT T :: CALL HCHAR(R,C+2,20):: FOR T=1 TO 3 :: CAL  
L KEY(O,K,S):: IF S<>0 THEN 390  
380 NEXT T :: GOTO 360  
390 IF POS(VS,CHRS(K),1)=0 THEN 360 ELSE K$=CHRS(K)  
400 SUBEND
```

I do not think this is very useful, but
somebody asked me for it - it converts decimals
to fractions.

```
100 CALL CLEAR :: CALL CHAR(95,"000000FF")  
110 DISPLAY AT(12,1):"Decimal?" :: ACCEPT AT(12,10):D ::  
T=1  
120 IF INT(D)<>D THEN D=D*10 :: T=T*10 :: DISPLAY AT(14,  
1):D :: DISPLAY AT(16,1):T :: GOTO 120  
130 DISPLAY AT(14,1):D :: DISPLAY AT(15,2):RPTS("_",LEN(  
STR$(T))):: DISPLAY AT(16,1):T  
140 FOR J=2 TO 9 STEP 3  
150 IF D/J=INT(D/J)AND T/J=INT(T/J)THEN D=D/J :: T=T/J ::  
DISPLAY AT(14,1):D :: DISPLAY AT(16,1):T :: GOTO 150  
160 NEXT J :: GOTO 110
```

Several years ago, John Hamilton wrote a
program you could use to key in a program with
TI-Writer, then merge it in, delete the "!"
after each line number, and run it as a
program. Its only problem was with lines of
over 80 characters. Since then, better
programs have been written - XLATE and
TEXTLOADER - which do not require deleting
anything but they still have some trouble with
long lines and with missing spaces. This
little version overcomes those faults but you
do have to delete the "!".

Try keying in a program into the Funlweb
Editor, be sure to put a carriage return at the
end of each program line. When finished, check
each program line which has wrapped around to
two lines. If the first character in that
second line should be preceded by a space,
insert a space as its first character. Then
save the file with the PF option and run this
little program. Enter NEW, merge in the output
file by MERGE DSKn.filename, go through it with
FCTN X and FCTN 1 deleting the "!" after each
line number, and it should run as a program.

```
100 DISPLAY AT(12,1)ERASE ALL:"Input file? DSK":  
"Output file? DSK"  
110 ACCEPT AT(12,16):AS :: ACCEPT AT(14,17):BS  
120 OPEN E1:"DSK"&AS,INPUT :: OPEN E2:"DSK"&BS,VARIABLE  
163,OUTPUT  
130 LINPUT E1:M$  
140 IF POS(M$,CHRS(13),1)=0 THEN LINPUT E1:M2$ :: M$=M$&  
M2$ :: GOTO 140 ELSE M$=SEGS(M$,1,LEN(M$)-1)  
150 X=POS(M$, " ",1):: Y=VAL(SEGS(M$,1,X-1))  
160 PRINT E2:CHR$(INT(Y/256))&CHRS(Y-256*INT(Y/256))&"!"  
&SEGS(M$,X+1,255)&CHRS(0)  
170 IF EOF(1)<>1 THEN 130 ELSE CLOSE E1 :: PRINT E2:CHRS  
(255)&CHRS(255):: CLOSE E2
```

I had 5 questions from a friend who wanted
to key in some pieces of information in
Funnelweb and then sort them. Trouble was, the
data tended to be more than 80 characters long.
Therefore it was saved as two or more separate
records, which a sort scrambled into garbage.

So, how do you create and sort long
records of varying length? The easiest way is
to let the disk drive controller do it for you.
Just type whatever you want, as long as you
want, then save it as a separate file, using
the first several letters of the text as the
filename. Do not include any spaces or
periods, of course. If you are using numbers
as filenames, pad them with leading zeros to
all the same length such as 001 to 999 or 0001
to 1000. The drive controller will sort those
files alphabetically, and this little program
will print them in that sequence -

```
100 CALL CLEAR :: DIM F$(127):: OPEN E1:"DSK1.",INPUT ,R  
ELATIVE,INTERNAL :: INPUT E1:D$,A,B,C  
110 INPUT E2:M$,A,B,C :: IF A=2 AND C=80 THEN X=X+1 :: F  
$(X)=M$  
120 IF LEN(M$)<>0 THEN 110 ELSE CLOSE E1 :: OPEN E2:"PIO  
"  
130 FOR J=1 TO X :: OPEN E1:"DSK1."&F$(J),INPUT  
140 LINPUT E1:M$ :: IF ASC(M$)<127 THEN PRINT E2:M$  
150 IF EOF(1)<>1 THEN 140 ELSE CLOSE E1  
160 NEXT J :: STOP
```

This method is limited by the fact that
you can only put 127 files on a disk, but if
you have more than one drive you can have 127
on each one, and use this program -

```
100 DISPLAY AT(12,1)ERASE ALL:"How many drives?" :: ACCE  
PT AT(12,18)SIZE(1)VALIDATE(NUMERIC):D :: DIM F$(510)  
110 FOR J=1 TO D :: OPEN E1:"DSK"&STR$(J)&"",INPUT ,REL  
ATIVE,INTERNAL :: INPUT E1:D$,A,B,C  
120 INPUT E1:M$,A,B,C :: IF A=2 AND C=80 THEN X=X+1 :: F  
$(X)=M$&"12"&STR$(J)  
130 IF LEN(M$)<>0 THEN 120  
140 CLOSE E1 :: NEXT J :: CALL LONGSHELL(X,F$()): OPEN  
E2:"PIO"  
150 FOR J=1 TO X :: W=POS(F$(J),"12",1)  
160 OPEN E1:"DSK"&SEGS(F$(J),W+1,1)&"."&SEGS(F$(J),1,W-1  
)  
170 LINPUT E1:M$ :: IF ASC(M$)<127 THEN PRINT E2:M$  
180 IF EOF(1)<>1 THEN 170  
190 PRINT E2:"" :: CLOSE E1 :: NEXT J  
200 SUB LONGSHELL(N,N$())
```

```

210 D=N
220 D=INT(D/3)+1 :: FOR I=1 TO N-D :: IF N$(I)<=N$(I+D)T
HEN 250 :: T$=N$(I+D):: J=I
230 N$(J+D)=N$(J):: J=J-D :: IF J<1 THEN 240 :: IF T$<N$
(J)THEN 230
240 N$(J+D)=T$
250 NEXT I
260 IF D>1 THEN 220
270 SUBEND

```

A recent article in a news letter reminded me of something I knew long ago but had forgotten. If you have been entering a lot of data into a disk file and the program crashes, all is not lost. Just enter CLOSE E1 in command mode and your data will be saved. If you get a FILE ERROR message, just try CLOSE E2 and so on until you hit the right one. Many user group newsletter editors use a program that puts a code on the address label to indicate when membership expires. Trouble is, no one ever reads their address label!

***** END OF ARTICLE *****

Why the Watchamacalit

by David DeHeer

It all started about one and a half years ago when I first purchased my Myarc HFDC from TM Direct out of California. I purchased the HFDC so that I'd be able to use a Hard Drive on my BBS (The Salt Flats BBS). Tom Wills, the author of the Paradigm BBS Software that I'm using, had just updated the PBBS program so that was compatible with the Myarc HFDC allowing for a faster access and processing of information on a BBS.

It became apparent to me immediately that the clock on the HFDC was running extremely fast (gaining about 3 hours for every 24 hour period). It became a nuisance to always have to reset the clock. In the meantime, Tom had converted the PBBS program so that it could be used without accessing the clock. Well, this solution was not acceptable to me so, I began to research the clock problem to find a real solution.

Just about this time, my HFDC started to present some problems that concerned me, so I sent it back to Myarc for repair. I listed as one of the problems that the clock was running too fast and I requested some assistance with it. Myarc was kind enough to send me the technical data sheets on the clock chip when they returned my HFDC repaired to me. Now things were beginning to fall into place. I quickly started testing out the suggestions and other information contained in the data sheets. After some time of experimenting, I built a test control board that contained a battery backup for the clock chip. This board required that I do some hard wiring on the HFDC in order to make it work. But, it worked. I was successful at backing up the clock so that I didn't have to reset it each time I turned the computer on.

Next was the real battle. Not knowing exactly how the clock chip pins had been laid out on the HFDC, but knowing what a clock crystal looked like, I decided that I was going to design a small PCB that would plug directly into the HFDC where the clock chip was at and that I could plug the clock chip into. This required about 3 weeks of design and testing (mostly with failures) before I came up with a simple design using the ground isolation theories recommended in the data sheets. I built a prototype board in my basement using spare parts out of a couple of old Canon copy machines and designed and built a single sided PCB out of a Radio Shack PCB kit. Upon completion, I dared to install the prototype on my HFDC and turn it on. It worked. I was able to not only provide a battery backup for the clock, but I could also adjust the speed of the clock.

At first I had to experiment with the clock speed and that's when I noticed that the two 18pF capacitors that are provided on the HFDC by Myarc was not enough to slow the clock down to the proper speed. I then removed the two 18pF capacitors and added two 33pF capacitors directly on the prototype PCB to effect the speed. Ahhhh, but this is too much. I then decided to replace one of the 33pF capacitors and replace it with a 6-36pF adjustable capacitor. At this point I noticed that the clock was not stable with the adjustments. It would run slow, then fast. I then realized that since the capacitors were located on the PCB that I made and that the clock crystal was still located on the HFDC, that this was the problem. It was important that the clock crystal and the two capacitors were as close to the clock chip and a zero (0) volt reference ground source as physically possible. I then moved the crystal to the PCB next to the clock chip. Low and behold, it worked. And it is still working on my HFDC today. My clock adjusted just fine (to within 2 seconds per 24 hour period).

I knew that I had to share this important idea and development with everyone else in the TI community that had a Myarc HFDC. So, I contracted the services of a company called ICONIX here in Ogden which does research and development and with their help, the "Watchamacalit" has become a reality. But, not quite. I had some help in all this development and testing from four great people. Mel Bragg, David Mischler, Harold and Helen Hilburn. With all of us in agreement, along with the co-operation of the Ogden TI Users Group, the "Watchamacalit" is here for your use.

Along on the disk you will also find an Extended Basic clock program that will allow you to set your clock and then display it on the screen. The program uses simple commands that open and close the clock continuously (the simplest of all routines).

I hope that you enjoy your "Watchamacalit" as much as I enjoyed designing it and making it available to you. The "Watchamacalit" comes with a 100% one year warrantee (except the battery). If you are dissatisfied with it, return it. No problem.....If you experience any problems with the "Watchamacalit", let us know. It is important that you are happy with our product.

Please read all of the other files contained on this disk. They are important, and you need to read them completely before attempting the installation of the "Watchamacalit" as we cannot be held responsible for improper installation of the "Watchamacalit", nor can we be held liable for any damage caused to your Myarc HFDC, MM 58274 clock Chip IC or the "Watchamacalit" if it is installed improperly (a word to the wise is sufficient).

For questions, comments, suggestions or general information, Call:

The Salt Flats BBS
 [BN1] 24 hours
 300/1200/2400
 (801) 394-0064
 User #1,2 or 3

HFDC is a registered mark of Myarc, Inc.
 Watchamacalit is a product of DDM Technologies,
 Ogden, Utah.

The Ogden TI Users Group
 "Watchamacalit" Repair
 1175 22nd Street
 Ogden, Utah
 84401-2112

***** END OF ARTICLE *****

Bits and Bites

by Larry Saunders

Subject: TI Artist Plus Fonts

Ever found using TI Artist Fonts that they had a gap too large or too small? Well here is how you adjust it.

I am using the example A,B,C, the first set is a part of a standard font. The width of (A) is 18 pixels, (B) is 17 pixels, and (C) is also 17 pixels.

In the second set I increased the pixel by two on each character.

In the third set I decreased the pixel by two on each character.

 Set 1 : Standard pixel spacing.

A
 3,6,18
 1,3,3,1,0,7,7,7
 0,128,128,0,0,160,160,160
 0,0,0,0,0,0,0,0
 7,7,7,15,15,15,15,15
 160,160,144,208,208,208,208,208
 0,0,0,0,0,0,0,0
 15,15,15,28,220,252,124,62
 208,208,200,232,232,224,236,252
 0,0,0,0,0,0,0,0
 31,31,29,28,60,57,58,58
 249,226,228,228,244,244,116,116
 0,0,0,0,0,0,0,0
 58,58,60,127,255,255,255,255
 116,112,248,253,253,253,253,253
 0,0,0,0,0,0,0,0
 247,227,9,115,7,1,3,1
 221,141,33,159,192,0,128,0
 0,0,0,0,0,0,0,0

B
 2,6,17
 8,28,28,8,227,247,255,255
 0,0,0,0,224,244,250,250
 255,127,126,60,60,61,61,61
 250,250,250,58,186,58,58,58
 61,61,253,254,127,63,61,60
 58,58,58,58,122,242,224,244
 60,60,61,61,61,61,61,61
 122,186,58,58,58,58,58,58
 61,61,124,255,255,255,255,255
 58,122,122,250,250,250,250,242
 239,215,16,57,124,16,56,16
 242,196,24,224,0,0,0,0
 C
 2,6,17
 2,7,7,2,15,31,63,63
 0,0,0,0,192,232,244,244
 63,63,63,60,56,57,58,58
 244,244,244,116,244,116,112,122
 58,58,58,58,248,252,127,63
 122,122,114,4,56,0,0,64
 56,57,58,58,58,58,58,58
 0,112,116,122,122,122,114,116
 58,56,62,63,63,63,63,63
 116,116,116,244,244,244,244,244
 31,15,2,7,15,2,7,2
 228,20,16,32,128,0,0,0

 Set 2 : Pixel spacing increased by 2

A
 3,6,20
 1,3,3,1,0,7,7,7
 0,128,128,0,0,160,160,160
 0,0,0,0,0,0,0,0
 7,7,7,15,15,15,15,15
 160,160,144,208,208,208,208,208
 0,0,0,0,0,0,0,0
 15,15,15,28,220,252,124,62
 208,208,200,232,232,224,236,252
 0,0,0,0,0,0,0,0
 31,31,29,28,60,57,58,58
 249,226,228,228,244,244,116,116
 0,0,0,0,0,0,0,0
 58,58,60,127,255,255,255,255
 116,112,248,253,253,253,253,253
 0,0,0,0,0,0,0,0
 247,227,9,115,7,1,3,1
 221,141,33,159,192,0,128,0
 0,0,0,0,0,0,0,0
 B
 2,6,19
 8,28,28,8,227,247,255,255
 0,0,0,0,224,244,250,250
 255,127,126,60,60,61,61,61
 250,250,250,58,186,58,58,58
 61,61,253,254,127,63,61,60
 58,58,58,58,122,242,224,244
 60,60,61,61,61,61,61,61
 122,186,58,58,58,58,58,58
 61,61,124,255,255,255,255,255
 58,122,122,250,250,250,250,242
 239,215,16,57,124,16,56,16
 242,196,24,224,0,0,0,0
 C
 2,6,19
 2,7,7,2,15,31,63,63
 0,0,0,0,192,232,244,244
 63,63,63,60,56,57,58,58
 244,244,244,116,244,116,112,122
 58,58,58,58,248,252,127,63
 122,122,114,4,56,0,0,64
 56,57,58,58,58,58,58,58
 0,112,116,122,122,122,114,116
 58,56,62,63,63,63,63,63
 116,116,116,244,244,244,244,244
 31,15,2,7,15,2,7,2
 228,20,16,32,128,0,0,0

Set 3 : Pixel spacing decreased by 2

Inventory Control

A
3,6,16
1,3,3,1,0,7,7,7
0,128,128,0,0,160,160,160
0,0,0,0,0,0,0,0
7,7,7,15,15,15,15,15
160,160,144,208,208,208,208,208
0,0,0,0,0,0,0,0
15,15,15,28,220,252,124,62
208,208,200,232,232,224,236,252
0,0,0,0,0,0,0,0
31,31,29,28,60,57,58,58
249,226,228,228,244,244,116,116
0,0,0,0,0,0,0,0
58,58,60,127,255,255,255,255
116,112,248,253,253,253,253,253
0,0,0,0,0,0,0,0
247,227,9,115,7,1,3,1
221,141,33,159,192,0,128,0
0,0,0,0,0,0,0,0

B
2,6,15
8,28,28,8,227,247,255,255
0,0,0,0,224,244,250,250
255,127,126,60,60,61,61,61
250,250,250,58,186,58,58,58
61,61,253,254,127,63,61,60
58,58,58,58,122,242,224,244
60,60,61,61,61,61,61,61
122,186,58,58,58,58,58,58
61,61,124,255,255,255,255,255
58,122,122,250,250,250,250,242
239,215,16,57,124,16,56,16
242,196,24,224,0,0,0,0

C
2,6,15
2,7,7,2,15,31,63,63
0,0,0,0,192,232,244,244
63,63,63,60,56,57,58,58
244,244,244,116,244,116,112,122
58,58,58,58,248,252,127,63
122,122,114,4,56,0,0,64
56,57,58,58,58,58,58,58
0,112,116,122,122,122,114,116
58,56,62,63,63,63,63,63
116,116,116,244,244,244,244,244
31,15,2,7,15,2,7,2
228,20,16,32,128,0,0,0

ATSO=0

Inventory Control is a fancy name for reordering parts when your stock gets low. In a previous issue we created five databases and filled them with part numbers, prices, etc. In those DBs we entered Current Stock (CRS), Minimum Stock (MNS) and Maximum Stock (MXS) to use for stock control. This month I have written two small CFs to check those fields and copy certain items to an ORDER Db if they meet my requirements. To put it very simply, if the Current stock falls below the Minimum stock, reorder. My first step is to CLOSE ALL of the currently open Dbs. My second step is to utilize that wonderful INSTALL area again. For those of you who do not have ramdisks, the INSTALL area is a great new feature. It is fast, quiet and does not wear out your disk drive. INSTALL ADD DSK2.\ORD places or loads the entire CF named \ORD into the TI's VDP memory. Aside from the previously mentioned advantages I also wanted to demonstrate INSTALLs ability to perform intricate steps, such as Maths or WHILE loops. When you get the hang of it I am sure you will use INSTALL quite frequently. SELECT 2 and USE DSK2.ORDER merely opens the ORDER Db in slot 2. You should recognise the lines from here to ENDCASE, they are straight out of LSPRNT/C from last month. I merely edited LSPRNT by deleting and adding lines and saved it to the new name ORDPNT/C. As in LSPRNT the DOCASE is used to open each of the DBs. The WHILE .NOT. (EOF) will leaf through each DB, one record at a time. IF the Current Stock (CRS) is less then the Minimum Stock (MNS), \ORD will be executed. IF not then the CF will MOVE to the next record and try again. If you look at \ORD, you can see that most of its line merely moves data from the 74LS Db to the ORDER Db, after a new record has been APPENDED. When using (or SELECTing) slots in this manner always tell TIB where the data is located by slot number (2.COPNM, 1.COPNM etc.). There are two field changes from the 74LS to ORDER, one is ORDQT (for ORDER Quant) and CHK. ORDQT should be self explanatory. CHK will be a number half way between MNS and MXS. If there are no other determining factors, I would like to raise my stock level to the first whole number above CHK. I saved CHK in the new Db (which is not necessary) to allow myself to visually check the process. The sum of CRS and ORDQT should be slightly larger then CHK.

***** END OF ARTICLE *****

```

*          07/08/90          ORDPNT/C
CLOSE ALL
INSTALL ADD DSK2.\ORD
SELECT 2
USE DSK2.ORDER
SELECT 1
LOCAL LOOP N 3
REPLACE LOOP WITH 1
WHILE LOOP<6
DOCASE
CASE LOOP = 1
USE DSK2.74LS'S1
BREAK
CASE LOOP = 2
USE DSK2.74LS'S2
BREAK
CASE LOOP = 3
USE DSK2.74LS'S3
BREAK
CASE LOOP = 4
USE DSK2.74LS'S4
BREAK
CASE LOOP = 5
USE DSK2.74LS'S5
BREAK

```

TI Base Tutorial No.22

by Martin Smoley
NorthCoast 99'ers

I am reserving the copyright on this material, but I will allow the copying of this material by anyone under the following conditions. (1) It must be copied in its entirety with no changes. (2) If it is retyped, credit must be given to myself and the NorthCoast 99ers, as above. (3) The last major condition is that there may not be any profit directly involved in the copying or transfer of this material. In other words, Clubs can use it in their newsletters and you can give a copy to your friend as long as it is free.

```

ENDCASE
  WHILE .NOT. (EOF)
    IF (1.CRS)<(1.MNS)
      DO \ORD
    ENDIF
    SELECT 1
    MOVE
  ENDWHILE
  CLOSE
  REPLACE LOOP WITH LOOP + 1
ENDWHILE
CLOSE ALL
INSTALL REMOVE \ORD

BRETURN Martin A. Smoley 1990
*****
*          07/08/90      \ORD/C
SELECT 2

```

```

*****
CREATED 07/08/90 CHANGED 06/17/90
FIELD DESCRIPTOR TYPE WIDTH DEC
1 COPNM N 005 00
2 MFGPARTNUM C 010
3 CPRICE N 006 02
4 CRS N 003 00
5 ORDQT N 003 00
6 CHK N 004 01
7 LCTN C 004
8 LASTSALE D 008
9 LRESTOCK D 008
10 NSN C 003
11 DESC C 040

```

```

APEND BLANK
REPLACE 2.COPNM WITH 1.COPNM
REPLACE 2.MFGPARTNUM WITH 1.MFGPARTNUM
REPLACE 2.CPRICE WITH 1.CPRICE
REPLACE 2.CRS WITH 1.CRS
REPLACE 2.ORDQT WITH (1.MXS-1.MNS)
REPLACE 2.CHK WITH ((1.MXS - 1.MNS) /2);
+ 1.MNS
  WHILE (2.ORDQT+2.CRS)<2.CHK
    REPLACE 2.ORDQT WITH 2.ORDQT+1
  ENDWHILE
REPLACE 2.LCTN WITH 1.LCTN
REPLACE 2.LASTSALE WITH 1.LASTSALE
REPLACE 2.LRESTOCK WITH 1.LRESTOCK
REPLACE 2.NSN WITH 1.NSN
REPLACE 2.DESC WITH 1.DESC

```

```
BRETURN Martin A. Smoley 1990
```

ORDER Database Listing with STRUCTURE above.

REC	COPNM	MFGPARTNUM	CPRICE	CRS	ORDQT	CHK	LCTN	LASTSALE	LRESTOCK	NSN	DESC
0000	1005	74LS05	0.14	3	5	7.5	D2B1	04/15/90	08/21/89	24	
Hex Inverter (Open Collector)											
0001	1008	74LS08	0.14	2	6	7.5	D2B4	06/19/90	05/15/90	9	
Quad 2-in AND Gate											
0002	1036	74LS38	0.24	4	5	7.5	D5B3	02/25/90	01/20/90	24	
Quad 2-in NAND Buffer (Open Collector)											
0003	1373	74LS373	0.50	3	5	7.5	D7B2	05/02/90	01/09/90	24	
Tri-State Octal Dual Latch											

rather than the printer, as the CFs name might indicate. This is because the price and availability may have changed after your last restock. If you use a Database, as I have, you can look at the data and decide if you want to order more or less of a particular item, based on its popularity. You can also check the current prices against a catalog or by other means. After editing the ORDER Db to your satisfaction, another CF can be used to write out an order form for the materials you require. If you have a normal supplier list, which you would keep in a normal supplier Database, sorted by their Normal Supplier Number (NSN), TI-Base can break down the ORDER Db and send orders to each supplier for those parts marked with that specific number. This seems like a lot of work if you consider my example (IC chips costing from 14 to 50 cents each), but the same ideas can be applied to larger items costing much more. And, if any of you are regular shoppers at Radio Shack you know that even for a 69 cent purchase, they run the barcode reader over the package, they ask for the last four digits of your phone number and your last name and their computer does the rest. As a matter of fact, the smaller your

profit margin is the more advantageous the computer inventory control becomes.

Ordering Updates

I have decided to not be involved in the distribution of the new TI-Base updates. If you received any updates from me in the past, I suggest you contact Dennis Faherty by mail for your future updates. Dennis is cheerful, courteous and helpful, and except for the fact that you will probably have to send back your current diskettes to get the new update price, you should have no trouble dealing directly with Inscebot. I will start any future tutorials with Inscebot's address for your convenience. I think that the new updates will cost \$14.95, but I am not sure.

My Last Tutorial!

This tutorial and any future tutorials should each be considered my last tutorial. Because of many other demands on my time, I find it almost impossible to allocate the time needed to write the TI-Base Tutorials. I have not lost the interest, but I have lost the energy needed to get the job done. Therefore, this tutorial should be considered my last. If by some chance I find the time and mental ability to write another tutorial, then that should be considered my last. You will no longer see (Continued Next Month.) at the end of the tutorials. No matter what happens I plan on throwing in the towel by the end of this year. It has been a lot of fun, but there are many things I would like to try when and if I find a little spare time.

Good luck. Marty.

***** END OF ARTICLE *****

Techo Time

by Geoff Trott

Red faces

Well at least my face is red! In my last article I mentioned the problems I was having with the voltage out of 3 terminal regulators. The problems got worse when I went out to Bob Relyea's place to install his new Mechatronics 80 column card. The voltage out of his 5 volt supplies were also measuring 6 to 7 volts. It was not until I got it all home that I realised that the problem was with my meter and not with the regulators. One of my meters has a battery low indicator but continues to read the correct value but the other one gives no indication of a low battery and its readings go up with a low battery voltage! No prizes for guessing which meter I was using most of the time. What a pain and waste of time. I checked all the three terminal regulators I had removed because they were giving too high a voltage and they all were working fine.

Monitors and Interfaces

The Editor's Monitor gave up the ghost last month. It turns out that it was the power supply IC and I was able to get a replacement. I then needed to make sure that it worked with the modified 80 column card, with the inverter taken out of the sync line. I first tried it with one of my monitor interfaces and had no joy. These interfaces have two sync outputs, one the inverse of the other. I fitted a switch so that I can select either one as I have modified my Wang monitors by removing the inverter at the sync input whereas if I need to test an unmodified monitor (which I did as it happens) I need the other output. This worked fine with the Wang monitors, modified and not modified, but would not work with the Commodore 1084 monitor that the Editor uses. On further looking at the circuit, the sync input to the Commodore does not have a capacitor in series with the input nor a terminating resistor whereas the Wang has both. The signal out of the interface on one of the switch positions is always above 2 volts unless it has a terminating resistor of 100 ohms. The Commodore did not have this either so I modified the output of this sync output to make it go to zero by changing the value of the resistor in series with the output to 220 ohms and putting a 220 ohms from the output to ground. This solved the problem.

The other monitor I was looking at worked when first turned on and then the picture went white after it warmed up. On pulling it to pieces I found that it was very dirty and seemed to be covered with black carbon. Thinking that this could not be helping its operation, I cleaned it all off as well as I could and that seemed to solve the problem. I then ran for some hours with no sign of losing its picture. I can only assume that in its previous life it was in a very dirty environment and the carbon started conducting when warmed up causing loss of picture.

Forth in Double Sided Double Density Disks

This may seem to be a software topic rather than a hardware one but it is rather technical so I have written about it here. At the last regional group meeting we were starting to look at the Forth language as some members had expressed an interest in doing that. In the process, I contemplated how to move the Forth system from the single sided single density floppies on which it came to double sided double density floppies which is the norm for most of us now. The difficulty is that Forth has its own way of looking at the contents of a floppy disk and this is not necessarily compatible with the way a disk manager expects to see a disk. Apart from the original boot disk, there is no real need for a Forth disk to be recognisable as a formatted disk by disk managers, but it does help to avoid assuming that a Forth disk is empty and not formatted if it responds to the disk managers correctly. Let me see if I can explain a bit better.

Forth uses blocks of data called screens, which are 1024 bytes long. Each screen is numbered and when screens are stored on a floppy disk they are put onto the disk in a position which depends on their number. Our disk system divides the disk into sectors each 256 bytes long. Each screen takes up 4 sectors. Screen 0 is stored in sectors 0 to 3. Screen 1 is stored in sectors 4 to 7. Screen 89 is stored in sectors number 356 to 359. Screen 179 is stored in sectors number 716 to 719. Screen 359 is stored in sectors number 1436 to 1439. If you have a single sided single density system, you can only access screens 0 to 89. If you have two disk drives, you can access screens 90 to 179 on a second disk in DSK2. If you have a double sided drive but still in single density you can access screens 0 to 179 on the first drive and if you have a second drive, sectors 180 to 359 on the second drive, and so on. You can have more than one drive and make it part of the Forth system by adjusting the values in some Forth variables which I will talk about later.

Now the problem with this as far as compatibility with the normal disk operating system, is that the first sector on each disk needs to have some information stored on it to make it into a recognisable formatted disk. This is called the Volume Information Block (VIB). Also, the second sector on each disk should sector numbers (or 0) which point to the File Information Blocks (FIB) for each of the files on the disk. This means that the first screen on each Forth disk should contain information that the normal operating system can use to say that this is a Forth disk and has no free sectors for use by the operating system. The rest of the disk can then be used to store Forth screens. This is quite easy to do by formatting a disk to whatever size you want and giving it a name of FORTH say. Then, using a sector editor (Disk Utilities or

DiskReview) set all the bytes from >38 to >FF to be >FF. This will set all the bits in the bit-map to 1 which says that they are all used. When you catalogue the disk, it will have the name that you specified and the size that you specified but will have no files and no free sectors. A disk set up like this is suitable for storing your screens of programs and can be any size. It will not help with a boot disk however, as this needs a bit more effort.

If you catalogue the boot disk, you will see that it has 3 files; FORTH, FORTHSAVE and SYS-SCREENS. FORTH is a DF80 file which is the loader from Editor Assembler option 3, FORTHSAVE is the kernel of the Forth system and SYS-SCREENS is a dummy file to take up all the rest of the space on the disk so that there is no free space. For the original system, this file is 313 sectors long. For a disk with 720 sectors, this file will need to be 673 (313 + 360) sectors long while for a disk with 1440 sectors the file will need to be 1393 sectors long. As well as getting the size of this dummy file correct, the sectors used in the original boot disk must be the same sectors used in any other disk as the screens must still be in the correct place. For example, as part of the boot process, screen 3 is loaded into Forth. This is done by reading in sectors 12 to 15 on the disk and these must contain the correct contents of screen 3. If the contents of a disk are copied by a normal disk manager, it is going to put the files in particular areas and may change them around. To do a sector by sector copy requires that the destination disk is formatted the same as the source disk so that method cannot be used. The method I used is as follows.

First format a disk to the size that you want to use. Then change the bit-map to indicated that only the first 360 sectors are free (implying that the rest are bad sectors). Use any disk manager to copy all the files from the Forth boot disk to the new disk. This will set all the sectors as used. Set the size of the SYS-SCREENS file to the size for the size of disk you are using. This last step is not necessary as the disk will be full without it so that it will not be possible to copy anything to it or save anything to it. Then you will have a bootable disk of the size that you want to use. You must then change the variables DISK_SIZE and DISK_HI to suit your new disk size and put these changes on screen 3 so they are set on boot up. There are some changes required in the word DISK-HEAD if you want to use it to put a header on your disks rather than using the method outlined above, but I will leave those for an article on Forth, if anyone wants it.

***** END OF ARTICLE *****

TREASURER'S REPORT

by Cyril Bohlsen

Income for previous month \$ 682.00
 Expenditure for previous month .. \$ 527.09
 Profit for previous month \$ 154.91
 Membership accounted for \$ 340.00 of Income.

Extended Basic Tips

by Stephen Shaw

When programming in Extended Basic, you do NOT have as much room as you may need for some exotic programs requiring large dimensioned arrays. Just try a program with one line - DIM P(8000) and run it!!! It is however possible to have an effective array of 8000 cells (or less of course) as demonstrated below...

```

1 ! HOW TO HAVE A NUMERIC ARRAY
2 ! OF 8000 VALUES
3 ! WITHOUT GETTING
4 ! OUT OF MEMORY
5 ! (just try DIM A(8000)!)
6 !
7 ! S SHAW OCT 1991
8 ! STOCKPORT ENGLAND
9 !
11 ! USES 8K LOW MEMORY
12 ! IN 32K RAM EXPANSION
13 ! WHICH IS REQUIRED
14 ! AND ASSUMES NO MACHINE CODE IS LOADED!
15 !
16 ! SET UP WITH CALL DIM
17 ! AND USED WITH
18 ! CALL S(CELL#,VALUE) TO STORE
19 ! CALL R(CELL#,VALUE_OUT) TO READ VALUE.
20 ! EG INSTEAD OF A=B(254)
21 ! USE CALL R(254,A)
22 !
96 ! CALL INIT ALLOWS ACCESS TO 32K RAM
97 ! ONLY NEEDED ONCE, THEN EVEN AFTER RUN
   "DSK1.P" PROVIDED YOU
98 ! DONT USE IT AGAIN, ALL THE STORED VALUES
   ARE AVAILABLE
99 ! TO PROGRAM P.
100 CALL INIT
110 PRINT "SIZE OF ARRAY?" :: INPUT "FROM 0
   TO...?":HIGH
120 CALL DIM(HIGH)
121 ! LINE 120 STORES 0 VALUES IN THE NECESSARY
   ADDRESSES
122 ! ONLY NEED TO USE ONCE OR TO RESET WHOLE
   ARRAY
130 INPUT "ARRAY CELL NUMBER?":ADR :: IF ADR>
   HIGH THEN 130
140 INPUT "READ OR SAVE?":A$ :: IF POS("RS"),A$
   ,1)<1 THEN 140
150 PRINT
160 IF A$="R" THEN 180
170 INPUT "ARRAY CELL VALUE?":V :: IF V>250
   THEN 170
180 IF A$="R" THEN CALL READ(ADR,V):: PRINT
   "VALUE IS ":V ELSE CALL SAVE(ADR,V) 190
   PRINT "-----"
200 GOTO 130

210 SUB DIM(N)
211 ! FILL ARRAY WITH 0 VALUES IN BLOCKS OF 10
   CELLS FOR SPEED.
220 IF N>8100 THEN DISPLAY AT(24,1)BEEP:"ARRAY
   TOO LARGE" :: BREAK
230 START=8200
231 ! WE HAVE AVAILABLE ADDRESSES 8192 TO 16384
   ACTUALLY!
240 FOR T=0 TO N/10+2
250 CALL LOAD(START+T*10,0,0,0,0,0,0,0,0,0)
260 NEXT T
270 SUBEND
280 SUB READ(A,V):: A=ABS(A)
290 IF A>8100 THEN BREAK
300 CALL PEEK(8200+A,V)
310 SUBEND
320 SUB SAVE(A,V):: A=ABS(A):: V=ABS(V):: IF
   V>250 THEN BREAK
330 IF A>8100 THEN BREAK
340 CALL LOAD(8200+A,V)
350 SUBEND

```

```

351 ! values stored must fit into one byte
    hence maximum value 2^8-1 = 255.
352 ! store a value -9 and it reads as 247
    which is 256-9 so no negatives!
353 ! store a value of 600 and it reads as 88,
    which is 600-int(600/256)*256
354 ! so no values over 255!
355 !
360 END

```

While there are restrictions- values stored must be positive and below 256- these limitations are usually not exceeded in most arrays.

The above program uses the 8k low memory block which is not used by Extended Basic, unless you are running some machine code routines. If you can write machine code for Extended Basic you do not need this tip...

You are not limited to single dimensioned arrays, but will need to formulate an equation to address second and higher dimensions....

For example, a two dimensioned array of 30,30 could be used in a form R(A,B) where memory location = 8200+A*30+B and so on and so on.

If you need to store values for more than 8000 cells, then this is possible if you further restrict the possible values and construct an encoding/decoding formula. For 16000 values, you could store values from 0 to 15, with two values per memory location (technically speaking, one value stored in the

low nibble and one in the high nibble). The ultimate in storage is at bit level, where you can store 8 values per memory location for a total array of 64000 cells, more than enough for anyone, although restricted to 0 and 1 values only.

=====

***** END OF ARTICLE *****

Vincent's Corner

Dear friends,

I have been released from the hospital so please do not send any material there. Send it to:

7 Thrift Close
West Pennant Hills NSW 2125

Crocodile Jones has sent me hints on adventure E9: GHOSTOWN.

Cannot explode safe? Find your gunpowder (3 parts). Put it in the keg and Samuel Morse will do the rest...

Stuck on 12 treasures? Let's hope you get the message from the jail...and if you still cannot work it out ... have we played Monopoly lately ...?

Cannot get back from tepee? Can you keep the beat and the custom? You will have to shoe the horse (The spurs and the horseshoe will come in handy as crooks like magnetism...)

If you have any further problems, send them to Crocodile Jones at Vincent's address.

If anyone can answer this question and get it to me by the end of August they will win \$5...

Who tells you about gold (pieces of 8)?
Clue...he does not like Mamba Snakes

I will run an adventure competition here, Dick Warburton permitting. Be sure to send your name and address with the answer to the question to win \$5. It should get to you in 3-4 days of you sending the answer. Postage will be refunded.

I am also running a quiz competition. The best entry will receive a \$20 prize plus three programs from the club. It will run up until December. There after the prize will go down to \$10 but the competition will run until April '94 which is the deadline. Any program will be considered but it cannot be a rerun of one of my programs or any other previously printed ones.

All the best, Vincent Maker

P.S. Send in those contributions to win \$10 for the best one...

```

100 REM *****
110 REM * TEACHING PROGRAM*
120 REM * FOR THE 99 4/A *
130 REM * FOR PRINCESS *
140 REM * SUZANNE *
150 REM *****
160 CALL CLEAR
170 DISPLAY AT(3,1):"THIS WILL TEACH YOU BASIC
    PROGRAMMING IN QUIZ PROGRAMMING"
180 DISPLAY AT(8,1):"WRITTEN IN THE NAME OF
    PRINCESS SUZANNE."
190 INPUT "PRESS ENTER TO GO ON.":GHJ$
200 CALL CLEAR
210 INPUT "THINK OF A NUMBER BETWEEN 0-10.-":C
220 PRINT "NOW THE COMPUTER WILL THINK OF A
    NUMBER(0-10)"
230 RANDOMIZE
240 B=INT(RND*10)
250 PRINT
260 PRINT "SO FAR,IT HAS USED AN INPUT
    STATEMENT TO RECORD YOUR NUMBER.EG INPUT.
    ALSO IT HAS USED A RANDOMIZE STATEMENT
    AND A... "
270 PRINT "A VARIABLE(LETTER STANDING FOR A
    NUMBER) FOR A ** RANDOM ** NUMBER IN T
    MAKES IT A WHOLE NUMBER; C=INT(RND*10).
    RND MEAN RANDOM."
280 PRINT "NOW LETS SEE IF YOUR NUMBER WAS
    WHAT I WAS THINKING OF..."
290 INPUT "PRESS ENTER TO GO ON":GHJ$
300 CALL CLEAR
310 IF B=C THEN PRINT "YES,IT WAS!!"
320 IF B<C THEN PRINT "NO,I WAS THINKING OF A
    NUMBER GREATER THAN YOURS.I HAVE SED A ' '
    SIGN IN THE IF-THEN ELSE STATEMENT.EXPLAIN
    LATER"
330 IF B<C THEN PRINT "NO I WAS THINKING OF A
    NUMBER LESS THAN YOURS.I HAVE USED A < SIGN
    THE IF-THEN -ELSE STATEMENT.EXPLAIN LATER."
340 PRINT "SO FAR THE PROGRAM LOOKS LIKE THIS:
    100 INPUT B 200 B=INT(RND*10) 300 IF B=C
    THEN PRINT""RIGHT"" ELSE IF "
350 PRINT "IF B>C THEN PRINT""TOO BIG"" ELSE
    PRINT""TO SMALL""
360 PRINT
370 PRINT "TO SUMMARIZE(I NEED TO CLEAR THE
    SCREEN BY 'CALL CLEAR' " :: INPUT "PRESS
    ENTER TO GO ON.":SDF$

```

ANOTHER EXAMPLE

Enter the following:

```
10 LET D$="PICKLES"  
20 LET A$=" AND "  
30 PRINT "WHAT GOES WITH PICKLES?"  
35 INPUT Z$  
40 CALL CLEAR  
50 PRINT D$;A$;Z$
```

Explain what the computer does in each line. Please do not skip this question, write down on a piece of paper what you think happens as the computer runs through each line then run the program and check if you are right.

GLUEING THE STRINGS

Here is how to stick two strings together to make a longer string. Enter:

```
10 CALL CLEAR  
20 LET W$="HAR DE "  
25 LET X$="HAR "  
30 L$=W$ & X$  
40 PRINT L$  
50 PRINT  
60 LET L$=L$ & X$  
70 PRINT L$
```

Before you run this program, try to guess what will be printed at line 40 and at line 70. write them down on paper.

Now run the program and see if you were right.

Rule: The "&" sign sticks two strings together.

Assignment 7:

1. Write your own program which uses the LET command and explain how it stores things in "boxes."
2. Write a program which inputs two strings, glues them together and then prints them.

ANSWERS TO LESSON 6

Assignment Question 6-2

```
10 REM MUSIC  
12 CALL CLEAR  
20 PRINT "WHAT IS YOUR FAVOURITE  
MUSICAL GROUP?"  
25 INPUT G$  
27 CALL CLEAR  
30 PRINT "WHAT TUNE DO THEY PLAY?"  
35 INPUT T$  
37 CALL CLEAR  
40 PRINT  
45 PRINT G$;" PLAYS ";T$  
50 END
```

Assignment Question 6-3

Type in lines 10 to 40 exactly as in 6-2 above then type in the following additional lines:

```
45 PRINT G$;  
46 PRINT " PLAYS ";  
47 PRINT T$  
50 END
```

```
380 CALL CLEAR  
390 PRINT "WHAT YOU NEED IS: 100 INPUT B 110  
RANDOMIZE (THIS IS THE WORD WHICH MNMAKES  
RANDOM NUMBERS) "  
400 PRINT "120 C=INT(RND*10) 130 IF B=C  
THEN PRINT" "RIGHT."" ELSE IF >C THEN  
PRINT""TOO BIG"" ELSE PRINT""TOO SMALL""  
410 INPUT "PRESS ENTER TO GO ON":GHJ$
```

***** END OF ARTICLE *****

Learning to Know Your TI Lesson No.7

with Percy Harrison

This lesson introduces you to the LET statement using the concept of memory boxes. Concatenation using the "&" symbol is called "gluing the strings."

The box model is used to emphasise that LET is a replacement command, not an "equal" relationship in the sense used in arithmetic.

The box idea nicely separates the concepts "name of the variable" and "value of the variable". The name is on the label of the box, the value is inside the box. The contents of the box may be removed for use and new contents inserted.

More exactly, a copy of the contents is made and used when a variable is used; the original contents remain intact. Enough of this rambling, let's get on with the lesson and learn just what I are trying to explain here.

LESSON 7 THE LET STATEMENT

The LET command puts things into boxes. Enter and run:

```
10 CALL CLEAR  
20 LET Q$="TRUCK"  
30 PRINT Q$
```

Here is what the computer does:

Line 10 The computer clears the screen.

Line 20 It sees that a box named "Q\$" is needed. It looks in its memory for it. It does not find one because "Q\$" has not been used in this program before. So it takes an empty box and writes "Q\$" on the front, and then puts the string "TRUCK" into it.

Line 40 The computer sees that it must print whatever is in box "Q\$". It goes to the box and makes a copy of the string "TRUCK" that it finds there. It puts the copy on the TV screen. The string "TRUCK" is still in box "Q\$".

NAMES AND VALUES

This line makes a string variable:

```
30 W$="MOPSEY"
```

The name of the variable is W\$. The value of the variable is put into the box. In this line the value of W\$ is "MOPSEY".

Editor's Comments

by Bob Relyea

First of all, I must give my apologies to both Larry Saunders and to the famous boxer. It was Larry Saunders who was responsible for the article 'The Funny Side of Things' that appeared in the last issue, not Larry Holmes. I have included several articles in this issue that have to do with Word Processing. I hope that you find them to be beneficial. I managed to find four users at the last Sydney meeting who were prepared to type up articles from some overseas newsletters. Thank you, but we need more! When work is mentioned a lot of people go running. Some thought will have to be put into editing for next year as this will probably be my last. Any volunteers? It is my fourth year and I would like a change to do something else. It is getting harder and harder each year to put out a magazine, not counting the cost. Where are we headed and who is going to do it? We will have to face those questions soon, I am afraid. I personally like the club and do not want to see it fold so lets pitch in and keep a good thing going! See ya at the meeting on Saturday.

***** END OF ARTICLE *****

Mini-Tower Panda Box

Good Expansion Possibilities!
by Bryant C. Pedigo

This review appeared in the newsletter of the Hoosier User Group.

Last May (1992) at the Lima, Ohio, Multi-User Group Conference, I purchased a Panda Expansion Box, which is a modified IBM mini-tower case marketed by Bill Nelson of Panda Computers Products of Garden Grove, California.

The Panda box has several advantages over the TI Peripheral Expansion Box, the foremost of which is a 200-watt power supply capable of running four floppy drives and a hard drive, all installed internally. There are spaces for 2 half-height 5.25-inch and 2 half height 3.5-inch floppy drives, as well as a 3.5-inch hard drive. Additionally, the Panda has a reset switch, a power connector at the back for use with a monitor, a very quiet cooling fan and a compact contemporary design. For Geneve users, there is a keyboard port on the front, and a card protector with a support post to help support the protruding part of the Geneve card.

Although it is designed for use with a Geneve 9640 in mind, it can easily be used with the TI99/4A. Although I purchased it to use with my Geneve, I tried it out with a TI99/4A. Unlike the Rave Expansion Box, you have to use the flex cable interface card if you want to use a TI99/4A console.

The inside of the Panda has been modified to accept TI style cards inserted horizontally. Because the power supply has a regulated +/- 12v output, any cards that use either a 7812 or a 7912 voltage regulator require modification in the form of a jumper to short out the +/- 12 volt regulators. The directions include complete information as to which cards require this modification and how to jumper both types of regulator.

The directions are, for the most part, complete and easy to follow. One item that was not mentioned, and which proved to be a major problem for me, was that the power supply must have a minimum power draw in order to work. Because of a problem that developed with my hard drive, I tried to set up the Panda with a Geneve, One 5.25-inch and two 3.5-inch floppy drives. It would start to power-up and then turn off. With a TI99/4A, there was no problem. Upon contacting Bill Nelson, I shipped the box and my Geneve to him. He checked the system out and found that it was not drawing enough power without a hard drive installed. After the box was returned to me, I installed a second 5.25-inch floppy, thus solving the power draw problem.

I have been using the system for several months without any problem. I recently tested ~~with both internal and external hard drives and~~ had no problems. I have noticed that cards seem to run as hot in the Panda box and in the TI PEB, therefore it would probably be a good idea to block off those parts of the ventilation grill at the rear that do not have cards installed so that the air flow inside will be increased.

I have no qualms about recommending the Panda box, especially in view of the excellent support from the vendor.

The Panda Expansion Box is priced at \$200.00. Nelson builds the boxes on request and requires that buyers ship a TI PEB to him to expedite the process. The TI PEB bus and rack is used in the Panda box - Ed.

***** END OF ARTICLE *****

The Amazing Atom

by Bob Relyea

In some ways one of the most interesting topics that I teach at school is Nuclear Physics. I say this because I am continually amazed at it's miniscule nature. The dimensions of the atom boggle the imagination.

Tiny as it is, the atom is made up of even tinier (subatomic) particles. Protons, which carry a positive charge, together with neutral particles called neutrons make up the central portion of the atom called the nucleus. The nucleus is about one hundred-thousandth the diameter of the atom, and is the realm of the nuclear physicist. Electrons, which have a negative charge, 'orbit' the nucleus.

What does this have to do with computers did I hear somebody shout? Most people probably know that the basis for the existence of a computer is a subatomic particle known as the electron. It is the 'control' of the electron that provides the energy for the function of our TI. These minute particles weigh about 9×10^{-31} kg. This means that you write the number 9 and then count 31 decimal places to the left(!) and then you place your decimal point. I could not even tell you how to read such a number as it is too small.

Another sub-atomic particle, the proton, is about 1000 times more massive than an electron. To give you an idea of the mass of a proton consider an activity that I give my year 12 Physics students each year. We weigh a matchstick which, if my memory serves me correctly, weighs about 0.3 grams. We then divide this figure by one million and after doing some quick sums we discover that you would need (roughly) 2 followed by 17 zeros of protons to equal the mass of a millionth of a matchstick! If this does not make one sit up and take notice than what does? Everytime you comb your hair(when it is dry) or scuff your shoes across a carpet you could be inadvertently shifting countless trillions of electrons. These little marvels of creation have been the focus of scientific thought for thousands of years but it only within the past hundred years or so that scientists have come to grips with many of its properties and have come with a model for the atom that explains most of the observed data. The neutron, which is one of the three major sub-atomic particles, was not discovered until 1932, two years after the planet Pluto was discovered.

These electrons form the basis of all modern electronics and without them radios, the TV, computers and anything else of an electrical nature would not exist. These little particles(or more correctly, the electric field that they create) travel around an electric circuit at the speed of light. This is awesome in itself when you think of how fast light travels. If you were aboard a spaceship that could travel at the speed of light you could lap the earth over seven times a second and go to the moon and back in about 2.5 seconds. It would take you just over 8 minutes to go to the sun even though it is 150 million km away.

The atom itself, of which the electron is a tiny part, is so small that you would need about 500,000 average-size atoms placed side by side to equal the width of a hair from the top of your head. I once saw a movie at Lucas Heights (near Sydney) which attempted to give a person the scale of an atom. The film showed a lady standing in the middle of the MCG with a few grains of sand in her hand. She said(I am paraphrasing) that if these grains of sand represent the protons and neutrons in the nucleus, then the electrons would be where the people are sitting in the stands. In other words, the atom is mostly empty space.

Man has undoubtedly reasoned about the nature of matter for thousands of years. It is reported that some Greek philosophers such as Democritus argued that if you cut an object in half and then repeated this over and over you would eventually come to the building block of matter which they the 'atomos', from which we get our word atom. With every breath we breath out a trillion trillion atoms, and since they are indestructible, everytime you take a breath you may have in it a couple of the very atoms that Democritus breathed out in his dying breath.

One of the most incredible discoveries in the past twenty years is that these sub-atomic particles that we are having a brief look at are apparently made up of even smaller particles! Who knows where it ends? It is

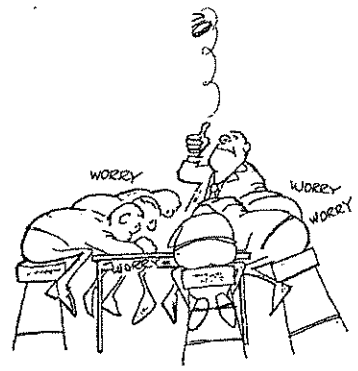
conceivable that the atom is as tiny as the Universe is large. It is not hard to get a bit philosophical in light of discoveries like that. You might want to 'argue the toss' but I am one of those people who believes that the complexity of nature and its obvious design could not be the result of an accident or left to the laws of probability. The more we study the atom and living things the more complex and intricate we find them to be.

Nobody has seen the interior of an atom even with the most advanced and powerful microscopes in the world. Most of the information that we learn about them is indirect. It is something like giving each student in a class a small sealed box with an object on the inside, explaining to them that they are free to experiment in any way they like to discover the interior with one exception - breaking the seal and looking inside. Some students discover the contents by shaking the box and listening to the noise it makes. Some are quite clever and ask for a magnet and experiment that way. Little by little the contents of the boxes are discovered without looking inside. Such is the type of experimenting that goes on to discover and unlock the mysteries of the atom. Our new knowledge has given us lasers, computers, transistors, space travel and nuclear energy, to name a few.

Experimenting still goes on. We have not come to the end of the road yet. One way of gathering information is to accelerate tiny, charged particles(such as a proton) to 99% of the speed of light so that they collide with a chosen 'target'. The energy and particles given off as a result of the collision are carefully studied to provide us with more information. These most advanced accelerators are kilometres long and in a very small space for a small period of time the temperatures can reach 7,000 trillion degrees Celcius. That figure is no mistake. For more information on this you only have to consult the May 1985 edition of National Geographic Magazine.

One of the reasons that I find computers to be fascinating is that they are tied up with logic and Mathematics. Quite often when I boot up the console and prepare myself for a session on the word processor (or whatever) I cannot help but to think of what might be going on inside those countless electronic devices. Geoff's articles entitled 'HOW' gave us some ideas but I still cannot feel a sort of helplessness about it all and continue to marvel at this 20th century creation.

***** END OF ARTICLE *****



Bits and Bites

by Larry Saunders

MICRO PINBALL II

Press forward on the joystick (or press the "8" key) to begin play. Pull down on the joystick (or press "0" key to launch the ball. After the ball is in play press the joysticks (BOTH JOYSTICKS) fire buttons (or press the "1" and the "=" keys to operate the flippers. You may view the scoreboard by pressing "9" WHEN THE GAME IS OVER!!

STOPPING THE GAME

You can pause the action at anytime by pressing the "P" key. Press the "SPACE BAR" to resume the game. To end the program, press QUIT when the game is over.

SCORING

Rollover at top.....10,000 Pts
Other rollovers..... 1,000 Pts
Spinner1,000 Pts
Moving target1,000 Pts
Flashing target.....1,000 Pts
All bumpers 100 Pts

When the moving target is hit it will close the outlane gates on the left and right sides of the machine in addition to the point scoring above.

Score accumulated by hitting flashing targets adds an additional 1000 points to the bonus counter. The bonus multiplier to the right of the bonus counter is incremented after all flashing targets are hit on the small playing area. When the ball drains the counter is added to the score as many times as the bonus multiplier indicates.

The disk is used to keep the 10 top scores with initials. Do not remove while playing or scores will not be entered. Do not put a "WRITE-PROTECT" tab on the disk, or the score will not be properly entered.

***** END OF ARTICLE *****

Nostalgia Time

by Geoff Trott

This series of articles consists of my observations on the contents of the early TNDs. Assuming that you find it interesting, I am continuing with the series this month. Please stop me if you do not want me to continue. I will repeat my general disclaimer in case anyone reading this article gets the wrong idea. I am attempting to describe the look, layout and content of the newsletters without any critical intent. I will try to avoid using any adjectives which could cause offense and if anyone takes offense, that is purely their interpretation of the words and not my intention. I hope that makes my position clear and that no one will be offended.

The April 1984 issue is printed in brown on white paper. It has a front cover picture of leaves, which looks quite nice and is 24 pages long. As Shane comments in his editorial, he is using the new club printer (Brother HR-15 daisy wheel, still in use!) to give good clear type (It no longer does! ED) and the leaves on the front page and colour are designed to give the feel of Autumn. Shane thanks Jim Howard for the header to his column and for analysing the survey forms and Ray Spargo for helping him over the last three years with the News Digest. He notes that the membership is over 600 and mentions a group of students who have produced commercial software like Toad, Asteroid Mission, Chopper Attack and Freeway. He also mentions Manual Constantinidis who wrote a program called Diablo and mentions a graphics program which should be on the market soon (probably Graphx) all done by members of TISHUG.

John Robinson in his Minutes column, he wrote that there were 120 new members last month and 110 members who came to the last Sydney meeting. He mentioned a bar-code reader for the TI99/4A and extensive software to be published in bar-code format for easy entry. He also mentioned that the club can now accept bankcard for purchases. Shane, in the Communicators column, wrote about the multi-user game called Space Empires, which can be played using a modem connected to another computer. Terry Phillips wrote that contact had been made with the San Gabriel Valley, USA, with a view to exchanging software. He also reviewed a program called The Ultimate Disk Index for cataloguing multiple disks. John Robinson also reviewed a program with a similar function called Super Cataloguer. Terry seemed quite impressed with his program while John suggested that people wait for the next version of his program.

Snippets from other user groups included an introduction to Terminal Emulator II by Don Veith. He wrote about the speech capability (with the speech synthesizer) of the module, giving a diagram of its relationship to the rest of the computer. He also gave a program to teach Pre-school children their alphabet with a talking alphabet program. There was a program for printing a screen using BASIC and a Tips from the Tigercub. There was an article on using CALL FILES to get enough memory to load programs. There was a program to print what the TEII module has sent to disk. There was an article on hints at starting programming and an example of Robbie Veith's first program on sounds. The program Plotysoft was listed which allows x-y plots of data to be made on the screen and a BASIC and Extended BASIC program called discount to show the difference in using the two different languages. Craig Miller wrote about the arrival of TI Forth and some of its characteristics, much faster than BASIC.

There was a column called The Basics, which is an introduction to programming in BASIC. There were two letters to the editor, one from a new member, Shannon Nash, who asks for a computer course and the second from David Lutz (TAB) with corrections and updates to the recent article by Shane. There was a review by Jim Howard of the Gemini 10X printer. He had some problems with a serial connection but

liked the printer. There was a music program from Russell Welham which played "Won't You Come Home, Bill Bailey". Younger set had Hall of Fame scores and a program called Caterpillar. Regional News had information from Illawarra, North Rock, Winston Hills (a new group), Marrickville, Gorokan, Liverpool and Newcastle. The results of the survey were presented. 14% of members responded and of those 30% had PEboxes and 33% had disk drives. Only 15% were above 45 years old and 72% had Extended BASIC.

The May 1984 issue had a number of significant changes to the layout which were to remain for a number of years. Each page had a border with a heading of "Sydney News Digest" at the top and the page divided into three columns, each in its own border. At the bottom of the page was a line, also in a box, with the Volume number, issue number, date and page number. The inside front page (page 2) was taken up with information about the issue and club, while the inside back page (page 27) is a cut-up page with membership application, shop mail order form, Classified Ad form and Bankcard authority. The back page is an advertisement for Computer Wave. For this issue, printed on white paper with black ink, the cover is of thicker card and is printed in red and black. The picture on the cover showed some fireworks exploding in the sky. There were more articles printed with the daisy wheel printer which made it look more readable. It was called the 3rd Birthday Edition.

Shane noted in his editorial that over 1000 copies of this issue were printed, with over 700 members in the club and that it had the largest number of pages (28) so far. He also claimed that a BBS should be running by the end of the month. In the Communicators, he expanded on this a bit and mentioned a multi-state chat on TAB to be arranged. He also appealed for help in getting the BBS going. John Robinson's column changed to Secretary's Notebook in which he reminisced about his introduction to the TI99/4A (in 1981 at Nock and Kirby's) and to the indomitable Shane Andersen for some free software on cassette and a News Digest. John went along to a meeting at Shane's apartment on Saturday 5th September. John was involved basically from the first meeting with the Club and on the committee. I suggest that you read his article if you are interested in the early history of the club. He wrote about the APC show which the club had a stand at. The members who helped at the show were: Terry Phillips, Steve Williams, Graeme Hollis, Peter Lynden, Andrew Nutting, Darius Battiwalla, Peter Varga, Chris Ryan, Slawomir Jabrzemski, Lloyd Robinson and Paul Mansell. He mentioned the Apple stand with the Lisa and the Macintosh. He met Bill Gates from Microsoft. There were a lot of photographs in this issue of people at the Show and others of members.

Younger Set had a few programs along with a picture of my daughter at the keyboard. There were a number of programs in the issue. Tigercub (Jim Peterson) contributed: 3-D sprite demonstration, clearing the screen outside in, Cryptocoder; Brett Pijan from Computerbase contributed Star Corps Getaway; Phil West of TIUP contributed A Glimpse of Reality; Russell Welham contributed a musical program for The Love Boat and converted a program to design a Log-periodic Antenna by M. Taylor. There was an article on a robot (RB5X) which was to be demonstrated at the May meeting. There was an introduction to Imagic who were promising to

provide software for the TI99/4A. Terry Phillips wrote reviews for three programs from Kidware, USA. John Robinson wrote about a Forth interest group aging set up and gave a review of the TI-Count accounting system.

Mark Neilsen continued his articles for programmers with an example on a simple filing program for saving a list of names on cassette or on disk. Peter Day continued his series on The Basics and starting to program in BASIC and also mentioned the first meeting of the Multiplan Special Interest Group. There were a number of letters to the editor. The first was from Tony McGovern, offering to contribute a series of articles on the power of Extended BASIC. He mentioned that he had just finished a game called Tex-Bounce. The next letter came from Ian Robertson of Helensburgh about converting the UHF modulator to VHF. This was quite easy to do on the Siel modulator as the VHF is produced first and then frequency shifted to UHF. The next letter came from John McDonald who was working on an index for National Geographic articles. He was doing this onto cassette and was asking whether any others were involved in such undertakings. The last letter came from Ted McCloskey who was concerned that, with a few exceptions, contributors to the Digest were terrible spellers and grammar manglers. He was very happy with the help from the Crisis Line and impressed with the facilities at the meetings except he ended at the back of the hall and could not hear well enough. At least Shane took responsibility for the spelling errors!

Regional news came from Blaxland (Robert Vines), Newcastle (who had visitors from Tamworth and Taree) (Peter Coxon), Illawarra (Bob Montgomery), Mosman (Betty Green or Alan Oxenham), Nepean Malcolm Tudor or Mel Copeland), Baulkham Hills (Lou Newhouse) and Marrickville/Ashfield (Shane Andersen). As I said before, this issue set the tone for the layout of the News Digest for a number of years to come. Reading the articles I get a feel for some of the excitement of those days. I am lucky that I still find this little computer and our club exciting.

***** END OF ARTICLE *****

For Sale

PE Box + interface	\$120
TI RS232 card + book	\$70
2 half height Matsui drives	\$80pr
TI Disk Controller + book	\$55
Myarc Floppy Disk Controller	\$95
TI 32K memory card	\$30
Horizon style RAM 768K (32K)	\$200
Horizon style RAM 224K (8K)	\$110

All items are extra to requirements. Call Tony

(044) 21-2905 day time,

(044) 21-4274 after 6.00pm

TiSHUG Software

by Larry Saunders

Disk G032

Two games on this disk, Billiards a very good version of Billiards, and TI-Runner (special version), this version of TI-Runner has 30 men so you can have a good chance of working out some of the harder levels.

Used= 336 Free= 22

BILLIARDS	33*Prog	BILLIARDT	33*Prog
BILLIARDU	16*Prog	ED/AS	33 Prog
LEVEL28	135 D	28 LOAD	5 Prog
ROOT	28 Prog	RUN	33*Prog
RUO	20*Prog		

Disk PP033

Page Pro pictures converted by me from SDGD pictures.

Used= 355 Free= 3

4HLOGO1	3 I 13	ABE	5 I 13
AIRBEAR	4 I 13	ANCHOR	2 I 13
B-BEAR	9 I 13	BALRINA	6 I 13
BANJO	3 I 13	BATMAN	3 I 13
BEACHBR	5 I 13	BIGBEAR	6 I 13
BIGSKUL	6 I 13	BLNBEAR	4 I 13
BUNNYS	3 I 13	C-BEAR	9 I 13
CAKE1	19 I 13	COP	4 I 13
DMPTRUK	4 I 13	DRAGON	6 I 13
DUCK1	5 I 13	EAGLE	6 I 13
EARTH	28 I 13	EPSON	5 I 13
EXERCIS	5 I 13	GENEVE	3 I 13
GEORGE	5 I 13	GG1	2 I 13
HAWK2	17 I 13	HIVE	9 I 13
HUEY2	20 I 13	HUGGING	5 I 13
JIGGS	3 I 13	JOGBEAR	5 I 13
KEY	17 I 13	KINGTUT	5 I 13
LUVSHAR	9 I 13	LUVSICK	5 I 13
OHIO	30 I 13	PILOT	9 I 13
PLUSTYP	2 I 13	PNGUINS	5 I 13
PUMA	6 I 13	RCKHORS	4 I 13
SCOTTIE	17 I 13	TILOGO	3 I 13
YABYUM	24 I 13		

Disk AT034

Artist Fonts converted from CSGD by me.

Used= 358 Free= 0

AMBROSA_F	39*d 80	BCKSLNT_F	18*d 80
BOLD_F	21*d 80	CHAR1_F	23*d 80
CHAR2_F	14*d 80	FATLIN_F	45*d 80
NEW3D_F	45*d 80	PRISMA_F	52*d 80
ROUNDED_F	46*d 80	SCROLL_F	40*d 80
SQUAT_F	15*d 80		

Disk U035

Utility disk

Banner a simple banner program. Church Bells, a church bell sound program. GBS, a disk editor program. Gorth, this prints Gorthic print. Grand Father Clock, sound program. Personal Real Estate, the same as the module but runs from disks. Triplecat, catalogs three diskettes and prints them three across, at a time.

Used= 347 Free= 11

BANNER	19 Prog	CHURCHBELL	4 Prog
DOC/GBS	42 d 80	GBS	33 Prog
GBT	26 Prog	GF	2 Prog
GORTH	48 Prog	GP	2 Prog
GRANDCLOCK	3 Prog	LOAD	5 Prog
REALEST1XB	16 Prog	REALEST2XB	35 Prog
REALEST3XB	35 Prog	REALEST4XB	34 Prog
ROOT	28 Prog	TRIPLECAT	15 Prog

***** END OF ARTICLE *****

The New Look Games Information Series III

by Robert Brown

Welcome to yet another WORLD famous Games Information article. Firstly I must thank Stephen Shaw (from the UK Users Group) for his nice comments about me (see June 93 TND). It is great to see someone actually reading and using my articles. Believe it or not, I have written over 20 articles, 20,000 words, and very few people have actually commented (bad or good) on these articles. Sometimes I think is it worth it?? I will tell you something! I read every word in the TND every month, yes every word. I do not always understand all the technical stuff, or really need to know about a certain topic, but I still read it, as I am trying to support my fellow TI'ers, as well as become a more knowledgeable person. So lets get behind our members, and give them support, encouragement, and a thank you every know and again. I will start. I personally thank Ross Mudie for all his help he has given me with my programming, especially with the links of assembly to basic. And also for his encouragement, to help me be the first sub editor on the BBS. With out this, I would be long gone!!

Well it does not matter anyway, as know one reads my articles, so know one will encourage member to write more articles. PLEASE PROVE ME WRONG!!!

Enough of that, lets get into it...

Since I have not written any articles for a while, I thought I would go for the NEW LOOK Games Info, ie new title, new information (but that is always the case), and a new FEATURE, a map to go along with the solution... yes I can not believe it either... a MAP... all your wishes have come true!!! Now let me introduce you to the main feature night. We have a good looking, well rehearsed article, one that has had hundreds of hours (would you believe tens) of work, much love and care put into it... so you better JOLLY read it!!!

Act 1 - Infocom's Enchanter.....

Welcome to the wonderful world of Enchanter! Before we start, a few words about the game: you will need to have food and water with you most of the time. Make sure you eat and drink when the program warns you that you are hungry and thirsty. Also, keep in mind that, if your water supply runs out, you can always get more, but once the bread is gone, you won't be able to obtain more food. So, don't go too far astray, or you might starve to death! Finally, remember to save the game every once in awhile, especially before doing anything dangerous!

Ok, the game begins with your being summoned by Belboz to a council of the Circle of Enchanters. You are told that you must put an end to Krill, a nasty and powerful Wizard, after which, with your trusty spell book, you are sent into the game proper, where you find yourself at a fork in the road. From there, go NE, then North, and you will be in a shack. Get the jug and the lantern, then open the oven door and get the bread. You have food, now you need some water.

Go South from the shack, then NE, SE, NE to the Shady Brook. Here you fill your jug with water. Head SW SE to another fork in the road, and from there SW SW to a deserted village. Well, almost deserted. There's one place that seems to be inhabited. You head South, and run into an old crone who hands you a spell scroll, and pushes you back out the door again. This scroll has the REZROV spell. Use the GNUSTO spell to write it into your spell book, then learn the spell. Now, go NE NE, and you're back at the fork. From there, head along East until you come to the outer gate of Krill's castle. REZROV the gate, then continue East to the inside gate.

Learn the FROTZ, NITFOL, and REZROV spells. FROTZ the lantern, then go North twice to the tower, and then Up the tower steps to the Jewel Room. There is an egg here, with all manner of little switches and doodads on it. You could actually open the egg by figuring out the proper sequence, but that isn't necessary. REZROV the egg, and it will open, to reveal a shredded scroll. There is no way to avoid this, even if you opened it by hand. Don't worry about that, however. Just get the scroll, and drop the egg. Learn REZROV once more (very handy, that spell!), then go Down to the Tower, and from there due East through the four Mirror Rooms to the North Gate. REZROV the gate.

Now move out North through the gate to the Woods. Here you find another spell scroll. This is the KREBF spell, which will repair the shredded scroll: ~~You will only need this spell once~~, so you don't really have to GNUSTO it. In any cZ7Y cast the KREBF spell on the shredded scroll, which will be restored and be useable. The spell on this scroll is ZIFMIA. GNUSTO that one, then walk East to the Swamp. NITFOL the frogs, who will tell you how to get the CLEESH spell. GNUSTO that one, too.

Now, return to the North Gate, and from there go back West through the Mirror Rooms to the Tower, and then from there due South until you come to the SouthWest Tower. Go East to the South Hall, then South to dungeon. Open the cell door and enter the cell. Examine the walls. Aha! A loose block! Move the block, and you will be able to move East into a secret room. There is another spell scroll here, the EXEX spell. Get the scroll and GNUSTO the spell. You will also find a silver spoon here, but that item is just "window dressing"; it has no useful purpose in the game, you should leave it behind. Now go back West, then South and Up to the South Hall again.

Drop everything you have, and go East into the Gallery. In the dark, you will see that one portrait is lit up. Move that, and you will find a black candle and a black scroll. The scroll holds the OZMOO spell. Get these items and return West. Pick up your supplies (you won't need the lantern if you take the candle), then GNUSTO the OZMOO spell. About now, you're probably feeling a bit tired. Go West to the Tower, and Up the stairs. Well, look at that! A comfy featherbed. Get into bed and drift off to sleep.

While you sleep, you have a dream. The dream is an indication of the location of another scroll. When morning comes, get up, then examine the bedpost. Aha! A hidden switch! Press it, and a compartment will open up, revealing the VAXUM spell. Get that scroll and GNUSTO the spell. It will soon be time for you to get yourself killed (among other things), so learn the OZMOO, NITFOL, and EXEX spells. Go down the stairs, the head East until you come to the South Gate. Go South from there to the meadow, then SE to the Shore. Here you will see a giant turtle with a rainbow-coloured shell. Cast NITFOL on the turtle, then tell him to follow you. Return to the South Gate and go East from there to the base of the SouthEast Tower. Go up the stairs, and you will be in the Engine Room, which is full of all sorts of dangerous and incomprehensible machinery. Cast EXEX spell on the turtle, then tell him to go SE and get the scroll.

The speed spell will make him fast enough to dodge safely through that room into the Control Room, where the Kulcad spell scroll is. On his way back, he'll set off a trap, but his heavy shell will protect him. You couldn't have managed it, because you have no protection from the sharp spears. The turtle will give you the scroll, then return to the beach. The Kulcad spell is too powerful for you to GNUSTO, so you'll have to just hold on to the scroll until you need it. And now, it's time for you to die.

Go down the stairs, then West to the Hall and North to the Closet. Pick up the Jewelled Box and continue North to the Courtyard. Don't bother trying REZROV on the Box; even that spell isn't powerful enough to open it. Just go East to the front of the temple, drop everything you have, then go East once more. You will be captured and put in a cell to await a sacrificial ceremony, at which you will be the guest of honour.

Now, OZMOO yourself, and Wait. The creatures will soon come for you, and you will be offered up on an altar and a knife plunged into your heart. Because of the OZMOO spell, you won't really be dead. However, you now have the means of opening the Jewelled Box. Once you are on your feet again, step down from the altar, and go East back to the courtyard. Cut the rope, then open the box and get the MELBOR scroll. Pick up the rest of your possessions, and GNUSTO the MELBOR spell.

Now, learn MELBOR, VAXUM and ZIFMIA, then head West, West to the Inside Gate, and from there to the Mirror Rooms. Here you must wait until you see the Adventurer on the other side of the mirror. At that point, ZIFMIA Adventurer, and he will appear before you, a little bit upset. Since you have a move to spare here, MELBOR yourself, then VAXUM the adventurer, who will now be very friendly towards you. He will also be looking at your inventory with covetous eyes.

As soon as he's been VAXUM'd, head directly East until you come to the Guarded Room. Don't worry, your new friend will follow you along. Once at the door (and you should carefully read the description of it; it's really amusing), tell the Adventurer to open it. He will do so, and the illusions of monsters will disappear, revealing only a plain wooden door. Go North through the door into the Map Room.

Here is one of those variable things in the game. There are several objects in this room, two of which, the map and the pencil, are crucial to your success. Sometimes, the Adventurer will pick up one or both of these items. You must get them back from him before he leaves, or you may never catch up to him again, in which case the game is lost. If the Adventurer picks up something you need, tell him to give it to you, and he will. In any case, you should drop the dagger now because you don't need it anymore. You also won't need the purple scroll with the FILFRE spell. Make sure you have the map and the pencil, then go back to the North Gate, and from there South to the Library.

Examine the ashes on the floor, then the tracks in the ashes. These will lead you to a mousehole in the wall. Reach inside, and you will find the scroll with the GONDAR spell. GNUSTO that one. While you're poking about here, you might hear guttural voices coming towards you. Don't worry; the MELBOR spell will keep you protected from any of the hairy creatures that might enter the room.

There is also a dusty old book here that you might want to read, as it will help you to understand what you're doing next. From the Library, return to the South Hall, then go down into the dungeon, and down once more to the first Translucent Room. You will probably be tired now, so just go to sleep right where you are; nothing will hurt you. You only had to sleep in the bed to have the dream to find the VAXUM spell.

When you wake up, eat and drink if necessary, then drop your spell book and the jug. Look at the map, and you will see some lettered points connected by lines. This is a magic map of the area where you are now. If you connect two adjacent points with the pencil, an opening will actually appear between those two rooms. Likewise, if you erase a line between two points, then you close off the opening between the two rooms. However, you can only use the eraser twice and the point twice before each becomes useless. Now that you know what you have, let's put it to some good use.

You are standing at the moment at point B on the map. From there, move South, East, NE, SE, and you will be at point F. The point all by itself, P, is where the Unseen Terror currently resides, and you are about to free it. Draw a line from P to F. You will see the opening appear in the wall before your eyes, and then a very scared Belboz will appear briefly with a warning. Now, move SW twice (the first time you won't get anywhere) and you will be at point P, where the GUNCHO spell is.

Now, erase the line from B to R, which will keep the Terror from escaping. Also erase the line from M to V, which traps him in the rooms again. Pick up the GUNCHO scroll, and make your way to point J. Draw a line from J to B, then walk West to B and get your spell book. Learn the CLEESH, GONDAR, and MELBOR spells. The GUNCHO spell is too strong to be written in your book, so you'll have to carry the scroll with you.

Now, go Up twice to the South Hall. MELBOR yourself, then go West to the South Gate, and from there due North to the Junction. At that point, head East twice to the Winding Stairs. This is another powerful illusion; no matter how much you walk up or down, you will never get anywhere. KULCAD the stairs, and they will disappear, leaving you over a Bottomless Pit! Fortunately, the bannister turned into a vellum scroll containing the IZYUK spell. IZYUK yourself, and fly East into (ta-da!) The Warlock's Tower!

Here, at last, you come face-to-face with Krill himself. However, before you can take care of him, you will have to get rid of a couple of his friends. When the dragon attacks, GONDAR the dragon, and when the being attacks, CLEESH him. Now, you're ready for the main event. As Krill begins his chant, GUNCHO him. He is banished forever from this lane of existence, and you have become a member of the Circle Of Enchanters!!

Of course, this is just the beginning, there will be other tasks awaiting you in the future..... and these will include reading some more of these wonderful Games Information articles, as well as solving lots more exciting adventures. Until our paths cross again, this is Robert Brown signing off for yet another edition of Games Information (Act II next month!!). As always, if you need to contact me you can to the following ways...

1. By the BBS, Username: Games Password: Remarkable????

Phone (02) 456-4606. Since BBS membership is FREE, every member should be ringing it up. If you do not have a modem, give me a call and I can get one for you eg Netcomm Pocket Modem, 300, 1200, 2400 & Fax approx \$300.00

2. By Phone... (02) 743-3019 Home
(02) 332-8110 Work (Until about 7pm)

3. By Post...

46 Llewellyn Street
Rhodes 2138
New South Wales
Australia

NOW you DON'T have any excuses for not getting in touch with me!! This article is Copyright By Robert Brown - All Rights Reserved

Just a Short Note:

(From the Author) "I have said it before and I will say it again... that this article was written because of lack of AUSTRALIAN & SYDNEY articles in the IND. If you think you agree with this statement, why don't YOU do something about it!!! How about NOW!!!"

I Overheard one day, when the author was boasting about his writing talents (or lack of them!!).

***** END OF ARTICLE *****



The Making of an Index

by Geoff Tröft,
Illawarra Regional Group, 1988

As I was thinking about the TND and the problems of what to put in the first issue of a new year, it seemed that an index of the previous year's effort would be very useful. This would add to the one produced last year by Brian Graham and provide a way of making it an ongoing affair. Done in this way, year by year, it would not be too daunting a task. That was the start of many hours of work.

I am not a data base person, but I have used Multiplan a bit, and I find that it caters for my data base needs. Personal Record Keeping always seems too inflexible to me, and my brief attempt to do something with Data Base Manager did not get too far. I have done quite a few things like student records with Multiplan, and although slow at times, it does a good job within its limitations, and is relatively easy to use. What is that I hear you say? Well at least the menu of things you can do at any time is always in front of you. I can not help it if you do not understand what all those choices are. Perhaps I can help however, if I explain how I used Multiplan to create the index for 1987, and then obtained the two indexes sorted by Title and by Author.

First, consider the problem. What I want to do is to go through each magazine in turn and type up its index. That is I want to type in the Title of an article, the Author and the volume number - page number of the article. I decided to put in a description as well, as some regular features could do with a description qualifying the title. For example, Link-it f14 is not a very complete description, or letter to the Editor, and so on. So there are 4 things to be filled in for each article. Hold on folks, sometimes there is no Author as such shown, but the magazine or organisation is given. This is catered for with a fifth entry. The nice thing about Multiplan is that all these decisions could be made after starting to enter the data as the need arises.

Multiplan is a spreadsheet program, which means it holds the data in rows and columns. It has a maximum of 255 rows and 63 columns, so I used 5 columns to hold the Title, Description, Author, Page number and Source of an article. Then each article was on a row, and Multiplan allows the rows to be sorted, based on the contents of one column. All the data for each article could be entered in any order, and then sorted according to the contents of one of the columns. It is also easy to copy cells from one to another, or to groups of cells, which can speed up the entry of numbers of similar items. In fact the index of one month can be the basis of the next month's index. Anyway enough of these drivelling generalizations, on with the actual facts of this case.

Put in the Multiplan cartridge and get its loading message on the screen. At this point you can press space twice to change the screen colours. I like black on green, so I stop there, but you can cycle around the combinations and stop at one you like. When happy, press <ENTER> and Multiplan loads from a disk called TIMP in whichever drive you have put it. After a short wait, a display of 18 rows and 4 columns appears on the screen with a selection menu beneath it. There is a reverse video bar in the top left corner of the spreadsheet and also over the first item in the menu 'alpha'. The bar on the spreadsheet can be moved about with the arrow keys, FCTN giving one cell motion, and CTRL giving screen motion.

The menu bar can be moved with the space bar or tab (CTRL(A) or CTRL(2)). Pressing <ENTER> causes the selected menu item to be active. It is quicker to press the key of the first letter of the menu item.

Example: The first thing I do after loading Multiplan is to press O for options menu. Then press N to set recalculate to no and press <ENTER>. Then I press T for transfer and O for transfer options. Then I press CTRL(A) to step over the first item in that menu and type in DSK2 in the setup field as I have two disk drives and store my data on disk 2. Then I am ready to start to enter data or read in some data from a file already on disk. Let us assume I am starting the entry of data at the start of the index.

I am only going to enter text or alpha data as the page number will be of the form V6.4.16 for Volume 6 (1987) number 4 (May) page 16. A number cannot have two '.'s or any other delimiter so all data will be text. Sometimes you have to be careful as Multiplan is waiting for either text or numbers and makes its decision on which it is by whether the first character is a number or not. This is another reason for using a V as the first character of the page number. First you will notice a message "enter a command" when the menu is present. To start then, press A and the menu disappears and the prompt ALPHA appears. The first thing to enter is the heading of the first column in row 1 column 1. This will be Title, but if the first character is a space then it will stay at the top of the column when the whole column is sorted. So type in 'Title'. If <ENTER> is then pressed we return to the menu and what was typed in goes into the box. However if right arrow is pressed (FCTN(D)), the highlight box moves one cell to the right and the prompt ALPHA/VALUE appears so that it is ready for the next item of data. Type in 'Description' but be careful to pause after the first character to give it time to decide that it is ALPHA you want. You only have to pause after the first character when the ALPHA/VALUE prompt shows. You can avoid this by pressing <ENTER> twice to select ALPHA, but this is slower anyway. Using the arrow keys to go across and back and down the spreadsheet, slowly the data is entered. To take a break, or just for safety's sake, save the data periodically. From the menu type T followed by S for transfer save, and then type in the filename, without the DSKn which has already been setup with the transfer option command. The file name will be already there if it has been loaded or saved during this session. Just press <ENTER> then and wait. If the file has been already used for Multiplan then you will have to confirm that you want to destroy the existing data. However, if the file exists but is not a Multiplan data file, it will be destroyed without any confirmation.

One of the most annoying things about data entry in Multiplan is to get used to making corrections with FCTN(0), FCTN(9), FCTN(4) and CTRL(4). The arrow keys are used for other things, so they cannot be used for moving the cursor through the data. It takes some getting used to and then causes uncertainty when using TI-Writer for example.

Data entry is quicker if all the cells are using the defaults, which means all the data does not appear on the screen, but we can fix that after we have everything in there. About the end of Number 6 there was only 17% memory left and 175 rows entered. Time to start another file, but how are we to sort over two files? Things are starting to get interesting at last.

So after all the data is entered there are two files each of which almost fills Multiplan's buffer, one with 175 rows and the other with 157 rows. Each file could be sorted on Titles and on Authors, although since I entered authors with first names first, they were sorted by first name. Also with the move commands of Multiplan, it is easy to change the order of the columns and rows. To get the whole index in alphabetical order of the titles the following steps are followed.

First sort the two files separately. It takes about 2 minutes to sort each column with the amount of data present. Then a halfway point must be chosen so that the first half of the two files can fit into Multiplan so they can be merged and sorted. The idea is to end up with two files containing the two halves of the sorted index of the whole year's index. Once the division point is found, say on the word Program, then all titles which start with a word before Program will be in the first file and those after and including Program will be in the second file. To get data from one file to another requires the use of eXternal copy command. To use this, the parts you wish to move to another file have to be named. Press N on the menu selection, when you will be asked to type in a name. Enter a suitable name and press CTRL(A) and then define the area in rows and columns which you want to access. While you are in each file, define a name for both halves of the data. Then enter a new file and press X to get to the eXternal copy menu. Here you must enter the file name, CTRL(A), the area name, CTRL(A), the cell where you want the area to start, CTRL(A) and N for no to linking. This is done twice to get the first half of the titles from both of the other files. Then the data can be sorted again, but this time all columns are sorted in reverse order to that which they are going to be printed. For example, for the title sort, first the page number is sorted, then the author, followed by the description and finally the title.

Printing from Multiplan has one problem. It will only print 80 characters on each line, so all the data must be arranged to fit in there. Another constraint is that it is only possible to change the width of a column to a maximum of 32 characters, which is the maximum that can be displayed on the screen. This can be overcome with continuous format. I decided to use the following column widths; 32 columns for the title, 23 for the description, 17 for the author and 8 for the page number. These are set using the Format command, by entering F followed by W with the cursor on the column of interest.

To print, press P to get the print menu and then press O to set the options of the area to be printed. Then go to the margins setup and set the top and left margins to 0, and the print width to 80. The print length and page length are set to give the output all on one 'page'. Then print file is chosen and a file name entered as the whole index will be merged and tidied up in TI-Writer. The file is produced after a wait and then the second half of the index is processed similarly.

The print files are about 54 sectors long and are both loaded into TI-Writer editor and some editing done, such as titles at page breaks, and removing the 'V7.' from all the page numbers. This all is reasonably simple and the final files are 117 sectors long. They are printed directly from the editor using 10 characters to the inch to spread the 80 characters out further. With the author index, the contents of the fifth column are moved into the first column where necessary, and multiple authors are given their own entries.

Checking the data for errors is aided by the sorting process. First the files are sorted into page number order, and the entries for each month checked with the actual magazine to locate any missed entries. Then the other columns when sorted allow the consistency of the use of capitals and spelling to be checked, and that names are consistent. After all the effort I was quite pleased with the result and so I used the same method to generate the index for the February issue as well which then will become the start of the next year's index. I started to enter this same one issue index into PRBase, a data base program which came with my new AT disk controller card, and found that although quick and relatively easy to use, it had some annoying quirks too. At this stage I am still convinced that Multiplan is as good as anything for this job, but PRBase may do it just as well if I was as familiar with it as I am with Multiplan.

***** END OF ARTICLE *****

Microsoft Multiplan (tm)

an Electronic Spreadsheet
by Tom Kennedy

ELECTRONIC SPREADSHEETS...	CELLULAR
ANALYSIS...	FORMULAS...
REFERENCING...	WORKSHEETS...
ABSOLUTE REFERENCING...	

These are buzzwords of a form of Data Processing that on the surface appears to be incomprehensible to all but accountants and the bridge crew of the Star-Ship Enterprise. As Word Processing is to writing a letter, Data Processing is to using a multiplication table.

Many people have a hard time using spreadsheets, because working with data in this format is similar to learning a new language. But once you learn to use the commands, and the procedure of working with data in a two dimensional row/column format instead of a one dimensional equation, you will find many ways in which Multiplan will allow you to "crunch numbers" faster and easier than using a calculator and notebook. More than that, Multiplan is flexible enough to be used anytime you want to display, or use, numbers or words in a row/column format. In fact, you could even adapt Multiplan to use it as a Word Processor!

What is a spreadsheet? In business, you often hear reference to "our books". The "books" that the businessmen, and you and I, keep are a pen and paper record showing the Debits and Credits of various bills paid and assets gained, plotted against a scale of time. Each intersection of row and column contains an entry for a value. The last column and/or last row contain a summation of all previous columns or rows. In an electronic spreadsheet, you recreate the printed form with the addition that each "cell" (a row/column intersection) can also contain a mathematical equation, or "formula", that automatically acts upon pre-defined cells and displays the result accordingly. If any value in any cell is changed, the formula instantly updates displayed results. This self maintenance ability is what pays off in using an electronic spreadsheet, such as Multiplan.

To operate Multiplan software on the TI, you must have 32K memory expansion, and at least one disk drive. An RS232 card and a printer are also handy, but not mandatory because - unlike word processing, where the end result is a printed piece of paper, the end result with a spreadsheet is useful data, which may be used many ways. Most worksheets are well over 80 characters in width, (up to 2016!) and this requires a cut and paste job, so a wide carriage printer is preferable.

To load Multiplan, you insert the cartridge and program disk, select Multiplan from the menu, and press <ENTER> to load. Before pressing <ENTER> you can select one of eight screen color combinations by pressing the space bar.

The first thing you will see is a grid across the top and left side of the screen. These numbers are the row and column locations in the top left, or "HOME" position. There are 255 possible rows and 63 possible columns, with the screen framing a small section. Each "CELL" is referred to by its row/column location, such as: R1C1, R10C22, etc. In R1C1, the Home position, there is a solid rectangle, as large as the width of the cell. This is your cursor, or "CELL POINTER", which is where any entry will appear. Below the cell grid is the COMMAND LINE, which shows the primary commands you will use. There are a number of sub-commands related to each of these, but you must type the first letter of the primary command first, or place the cursor over the command and hit <ENTER>. Below the command line is the MESSAGE LINE, which prompts you for further information when needed. In the bottom left corner is the current cell pointer location, and to the right of that is the contents of the current cell. Lastly, in the bottom right corner is the available memory space remaining.

Appendix A is a list of the twenty commands shown in the Command Line, with the forty sub-commands that apply to each.

ALPHA The first command given before entering text into the current cell location. All alpha-numeric characters can be used, but numbers will be treated as text, and cannot then be used as values for calculations.

BLANK Used to erase the contents of a specified cell or range of cells. Blanked cells retain their location and format.

COPY Allows you to duplicate any cell or cells in any number, including both cell format and content.

DELETE Completely erases a row or column.

EDIT Allows you to edit the contents of a cell, or the formula in that cell, without re-entering the data. Requires careful use of the EDIT keys.

FORMAT Defines all of the various parameters of cell width, content, and display of data.

GOTO Moves your cell pointer immediately to any cell, by giving the row/column or pre-defined name. Also used to move from one window to another.

HELP Calls up a detailed HelpFile (from disk) that covers the whole Multiplan software, including a command summary.

INSERT Inserts a blank row or column, formatted to DEFAULT settings.

LOCK Protects the cell, or formula, from accidental overwrite.

MOVE Moves a cell, or group of cells, to specified row/column, deleting the original.

NAME Allows you to give a name to a cell or group of cells to aid in future references to that cell. "Total" or "Sales" are examples.

OPTIONS Covers global options such as RECALC, MUTE, and ITERATION. The most important of which is cancelling RECALC, to avoid waiting for each entry to recalculate the entire worksheet.

PRINT Used to print the worksheet. Before printing, you must first define the extent of the field to be printed with MARGINS and OPTIONS, then select PRINTER to start output. PRINT FILE outputs to disk instead of the printer to be included into a Word Processor file, or other cases where you need the worksheet stored in ASCII format.

QUIT Self explanatory, provides a "safe" exit.

SORT Sorts entries in cells in a specified column, in either ascending or descending order.

TRANSFER Includes six sub-commands which are used: to LOAD, SAVE, RENAME, or CLEAR an active worksheet. Also, to DELETE a file from a disk, and an OPTIONS command to define disk name and format.

VALUE Used to enter a numerical value or formula into a cell. This must be used for numbers that will be used in calculations.

WINDOW A window is used to overlay one or more portions of a worksheet with another. As an example, to hold the titles of columns fixed while the data scrolls underneath. The sub-commands define how the windows are opened, closed, or linked together. A border can be defined to offset it from the worksheet.

EXTERNAL Allows related worksheets on disk to be linked as a source of data for the active sheet. Any range of cells can be drawn up for reuse. Multiple worksheets can be linked relative to each other so as to work together.

Appendix B is a list of the Key Functions used in the TI version of Multiplan. Most functions have two optional keystroke choices. This is to allow you flexibility in accessing them.

CELL POINTER CONTROL KEYS:

F-E
F-X Typical cursor keys, scroll the sheet
UP,
F-S down, left, right. As in BASIC.
F-D

C-E
C-X Page scroll. Similar to cursor
scroll,
C-S except moves in one screen width or
height
C-D blocks.

C-6 (C-W) Moves cursor to the next window as defined with the WINDOW command

C-3 (C-F) Jumps to the next unlocked, unblank cell to the right, skipping over cells protected with the LOCK command.

C-1 (C-Q) Jumps to the "HOME" position, row 1/column 1, which is the view seen when first starting up Multiplan.

F-1 (C-Z) Opposite of C-1 ("HOME"), except stops at the lower right corner boundary of the area you are working on.

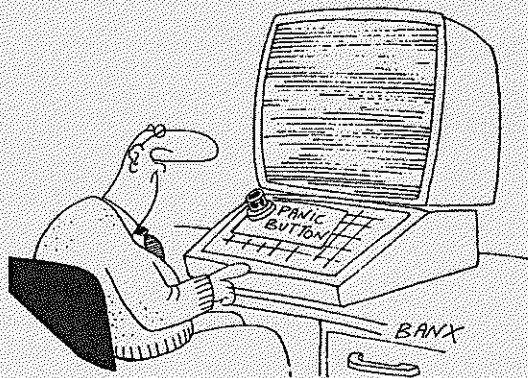
ACTION KEYS:

- <SPACE> In Command mode, (when command choices are displayed) skips through the commands, highlighting each with the cursor. Hitting <ENTER> selects the highlighted command. In the command menu, forward spaces through each response field.
- C-H (F-9) (When not editing) Backspaces through the response field, opposite of <SPACE>, to make selections of options.
- C-A (C-I, C-2) TAB key. Tabs over a response field to the next selection.
- C-C (C-=) Cancels current operation. A failsafe "escape" to abort command selection.
- F-4 (When printing file) Aborts printing operation.
- <ENTER> Activates a menu selection or command.
- F-7 (F-I) Activates and displays the helpfile, which must be on the default disk drive (see TRANSFER OPTIONS)
- F-8 Recalculates the entire worksheet when the RECALC feature has been cancelled with the OPTIONS command.
- <-, +, 0-9> Invokes the VALUE option of data entry, as opposed to ALPHA, for text entry.

EDIT KEYS:

- C-H (F-9) Backspaces through data entry for editing
- F-0 (C-Y) Single-character delete.
- C-4 (C-L) Skips to the next character right (like "F-D" in BASIC)
- F-4 (C-K) Skips to the next character left (like "F-S" in BASIC)
- C-5 (C-P) Skips to the next word right.
- F-5 (C-O) Skips to the next word left.
- C-7 Changes all relative references to cell locations (e.g. R+1C+2) to absolute references. (e.g. R2C5)

***** END OF ARTICLE *****



The Funny Side of Things

by Larry Saunders

How do you keep a blonde entertained for hours? Answer- Buy her a bag of M and M's and tell her to put them in alphabetical order.

A dumb blonde- a smart blonde and Santa Claus walk by a table and spot a dollar note. So, who picks it up? Answer- The dumb blonde - the other two don't exist.

What do you get when a blonde dyes her hair? Answer- artificial intelligence.

What do you call fifteen blondes in a circle? Answer- A dope ring.

What do you do if a blonde throws a hand grenade at you? Answer- pull the pin and throw it back.

Why do blondes put their hair in pony tails? Answer- to cover up the valve stems.

What does a blonde say when you blow in her ear? Answer- thanks for the refill.

How do you drown a blonde? Answer- put a mirror on the bottom of the pool.

How do you make a blonde's eyes light up? Answer- you shine a torch in her ear.

Why did the blonde scale the glass wall? Answer- to see what's on the other side.

How many blondes does it take to make a chocolate chip cookies? Answer- two, one to mix the batter-- one to peel the M and M's

Why did the blonde get fired from the M & M factory? Answer- because she kept throwing away all the W's.

What is a blonde doing when she grasps at thin air? Answer- collecting her thoughts.

Why do blondes twist their hair on their fingers? Answer- they're trying to screw their brains back in.

How can you tell when a blonde has been using your computer? Answer- when there is liquid paper on the screen.

How can you tell when she has been using it again? Answer- she's written over the liquid paper.

Why did the blonde climb the chain-link fence? Answer- to see what's on the other side.

Why can't blondes be pharmacists? Answer- they can't fit the bottles in the typewriter.

What does it say on the tombstone of an atheist? Answer- all dressed up and nowhere to go.

What do you call a brunette standing between two blondes? Answer- an interpreter.

***** END OF ARTICLE *****

Regional Group Reports

Meeting Summary For AUGUST

Banana Coast	08/08/93	Sawtell
Central Coast	14/08/93	Saratoga
Glebe	12/08/93	Glebe
Hunter Valley	14/08/93	
Illawarra	17/08/93	Keiraville
Liverpool	13/08/93	Yagoona West
Northern Suburbs	26/08/93	
Sutherland	20/08/93	Jannali

BANANA COAST Regional Group (Coffs Harbour Environs)

We never miss meeting at Kerry Harrison's residence 15 Scarba St. Coffs Harbour, 2 pm second Sunday of the month. Visitors are most welcome. Contact Kerry 52 3736, Kevin 53 2649, Rex 51 2485 or John 54 1451.

CENTRAL COAST Regional Group

Regular meetings are normally held on the second Saturday of each month, 6.30pm at the home of John Goulton, 34 Mimosa Ave., Saratoga, (043) 69 3990. Contact Russell Welham (043)92 4000.

GLEBE Regional Group

Regular meetings are normally on the Thursday evening following the first Saturday of the month, at 8pm at 43 Boyce Street, Glebe. Contact Mike Slattery, (02) 692 8162.

HUNTER VALLEY Regional Group

The meetings are usually held on the second Saturday of each month at members homes starting at 3:15 pm. Check the location with Geoff Phillips on (049) 428 176. Note that after 9:00 pm this number is used for the ZZAP BBS which includes TI-99 information. Geoff.

ILLAWARRA Regional Group

Regular meetings are normally held on the second Tuesday of each month after the TISHUG Sydney meeting (except January) at 7.30pm, at the home of Geoff & Heather Trott, 20 Robsons Road, Keiraville. A variety of activities accompany our meetings, including Word Processing, Spreadsheets and hardware repairs. Last month Geoff prepared an interesting lesson on the idea and use of the FORTH programming language. Contact Geoff Trott on (042) 29 6629 for more information.

LIVERPOOL Regional Group

Regular meeting date is the Friday following the TISHUG Sydney meeting at 7.30 pm. Contact Larry Saunders (02) 644-7377 (home) After 9.30 PM or at work (02) 708-1987 Liquorland Yagoona for more information.

*** ALL WELCOME ***

13th August 1993
34 Colechin St * TI Artist Plus *
Yagoona West 2199 and other utilities

Bye for now Larry.
Liverpool Regional Co-Ordinator

NORTHERN SUBURBS Regional Group

Regular meetings are held on the fourth Thursday of the month. If you want any information please ring Dennis Norman on (02)452 3920, or Dick Warburton on (02) 918 8132. Come and join in our fun. Dick Warburton.

SUTHERLAND Regional Group

The May meeting was attended by four regulars, being Joe, Derek, Herbert and myself. Some considerable time was spent in customising a spellchecker for T.I.Writer. Derek had been experimenting with this idea previously. We also looked at different ways of de-archiving the Page Pro cards developed by Alf Ruggeri. Page Pro Bannermaker proved popular, although it is not as user friendly as one might expect. Regular meetings are held on the third Friday of each month at the home of Peter Young, 51 Jannali Avenue, Jannali at 7.30pm. Peter Young

TISHUG in Sydney

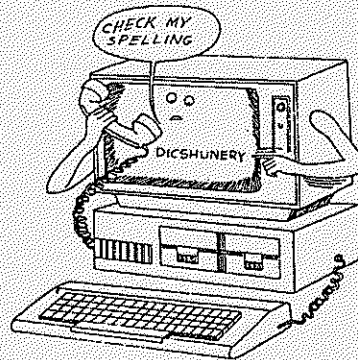
Monthly meetings start promptly at 2pm (except for full day tutorials) on the first Saturday of the month that is not part of a long weekend. They are held at the RYDE INFANTS SCHOOL, Tucker Street (Post Office end), Ryde. Regular items include news from the directors, the publications library, the shop, and demonstrations of monthly software.

AUGUST MEETING - 7th AUGUST

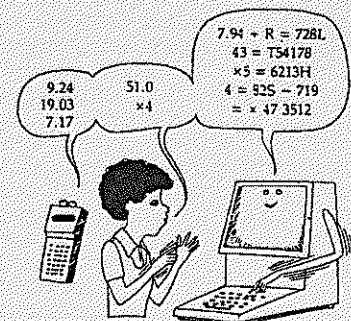
The cut-off dates for submitting articles to the Editor for the TND via the BBS or otherwise are:

September	15th August
October	12th September

These dates are all Sundays and there is no guarantee that they will make the magazine unless they are uploaded by 6:00pm, at the latest. Longer articles should be to hand well before the above dates to ensure there is time to edit them.



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