Sydney, New South Wales, Australia $3

TIsHUG News Digest   ISSN 0819-1984

INDEX

EDITORS COMMENTS

You probally have noticed that the magazine has changed a little in it's setting's, printsize, spacings, etc. We at the operating end of the magazine are trying different ways to reduce the cost of producing and printing, but still keep the High Standards that everyone has come to expect.

This magazine is for all of the TI connunty, to read, to type in programms of interest to ourselves, to advertise equipment For Sale, place Wanted ads (the need for more equipnent), aslo for Help (if someone is having problems with a programme, progranning or operating an existing progranme), please put pen to paper, words on disk or tape and send them in.

Menbers of the TI community this is your magazine please support it.

We would appriciate nore articles.
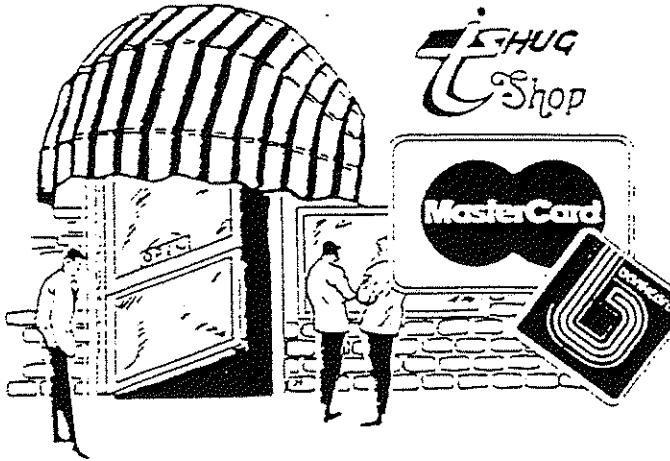
TISHUG SHOP.

with Percy Harrison.

At last we have started to distribute the 80 Column Cards, the first seven being collected at the september meeting. To those members who have already ordered their cards and who can't get to a meeting to collect them it will be necessary for you to forward a cheque to me for $42.00 as it was decided by the Directors that although we had advised that we would provide cards to those members who paid for cards from OPA we did not realise at the time that the cost of making the cards locally would be in the order of $200.00. Whilst we were prepared to accept a loss of $165.00 per card we cannot, in fairness to other members of our club, absorb the additional cost of $35.00 for the locally made cards and therefore, at the August meeting advised our members that they would have to pay a further $35.00 for the card. This was accepted by most members present. On top of this there is an additional $7.00 required to cover packaging, postage and insurance for mailing to members not able to collect their card from me at our monthly meeting.

In order to ensure that you receive your cards when they become available would you please forward your remittance for the extra costs as soon as possible. All cards should be available by our November meeting.

Whilst still on the subject of 80 Column Cards, some of our members have had difficulty in following the instructions that Geoff issued in the September TND. If there is a major problem here I'm sure Geoff will rectify it by issuing further instructions clarifying any problems that have been reported to him.

This month I will devote the rest of this column to a brief write-up of the programs released on IBM Software disks IBM 20 to IBM 24 respectively.

IBM 20 UTILITIES 4:

2FORMAT. Format 2 is a series of batch files that allows anyone with two disk drives, no matter what the format, to format disks in both drives without any hassles.

AFORMAT. This handy batch file utility will continuously format disks using DOS's Format.Com in both "A" and "B" drives, regardless if it is a 5.25 or 3.5 inch drive or mix of the two. It will alternate between the two WITHOUT you having to press the "Y" key, and then press the "ENTER" key twice.

ALIGN. This program allows you to move a diskette drive head to absolute track locations and operate the drive while checks and adjustments are made. 40 track single or double- sided drives are supported.

BATPATCH:

BATCHMAN. Designed both to give your batch files significantly more power and to add many of the refinements we all wish DOS provided. You can check the DOS version, available memory, or display type and then branch accordingly. You can create colourful menus that branch on a user keypress. And, among its many capabilities, BATCHMAN will let you adjust the keyboard typematic rate and tame the grating DOS beep or turn it into a tune.

BIGECHO. This is a simple way of producing eye-catching headings for any batch file. Use it like the DOS batch command ECHO.

BIRTHDAY. Give someone a birthday surprise by slipping this program into their AUTOEXEC.BAT file. Simply specify their name day and month of their birthday and on that date the program will display a "Happy Birthday" message and play an appropriate tune.

CCS. The Configuration Control System allows you to store different options in your CONFIG.SYS and AUTOEXEC.BAT files. At boot up time, the user can select the option they wish to boot with.

DISPLAY. This is a command line screen blanker program. DISPLAY OFF blanks the screen, DISPLAY ON restores it.

BMENU. This Batch Menu System allows you to insert pop-up menus within a batch file.

BOOT. Custom-made boot messages which, when included on a disk, produces user-friendly messages that identifies what disks they have and what went wrong when they fail to load.

CFORMAT. This is a disk formatting program that is a great improvement over the standard DOS format command. CFormat contains many additional features such as continuous formatting, formatting without verification, and quick re-formatting of previously formatted diskettes. This program only works with 360K floppies.

CORE. This program will measure the performance of one or two hard drives. the evaluation is made using three tests: data transfer, random seek, and track-to-track seek without destroying data.

DISKRW. This is a very FAST floppy disk processing program for copying disks in one pass, mass duplication (one source, multiple destinations) and to store contents of disks in image files and create exact disk copies by writing such files back to disk.

EASYDIAG. This utility is a safe, non-destructive way to verify the configuration of your AT compatible computer, and to specifically test the hard drive/controller system.

EDPART. This is a disk partition editor capable of managing up to four partitions on PC/XT and AT hard drives.

EMC110. This is a program designed to cache IBM-XT/AT hard disks in LIM expanded memory; it will not cache floppies, nor will it cache in DOS memory or AT extended memory.

EZCL. A custom diskette duplicator. Fast, Safe, and easy to use. A good context sensitive help and on-line manual is included on the disk.

FASTFMT. This fast formatter utility is designed to save time when you want to format a boxful (or more) diskettes. It uses (and requires) two disk drives and DOS 2.0 or latter, and 128K.

FDCTEST. This program will test any floppy controller you have installed in your PC. It will automatically determine if the floppy controller is a PC8477, 82077, DP8473 or other PC compatible floppy controller and will perform tests that pertain to that device.

FSTCOPY. Somewhat similar to DSKRW (I think).

HDDRVDAT. This is a text file listing specifications for 208 different Hard Disk Drives.

POPUP:

ASC. This is a memory resident program that, when loaded, pops up when the Alt-A combination is pressed and provides a handy ASCII chart for programmers.

PAD. PAD is a memory resident notepad that pops up over running application programs and allows you to save up to five pages of comments, phone messages, and the like.

POPCAL. Pops up a calendar window for any month from January 1583 to December 9999.

SUGGEST. Flashes a message on the screen at selected rates and durations ranging from many minutes to a brevity approaching the limit of subliminal perception (like that!).

TSRUTILS. This is a "Terminate and Stay Resident" utility which includes programs that are useful in managing DOS memory, and in particular, managing memory-resident utilities.

XANADU. A collection of useful small utilities which were designed to help you get the most out of your PC.

IBM 21 GAMES #1:

JILL. Jill of the Jungle is a 256 colour animated arcade game. Guide the fearless Jill through this immense animated game world.

PACMAN. The Pacman game that many of our TI'ers are familiar with.

IBM 22 GAMES #2:

BREAKOUT. This is a game of skill. It is simple to learn and should give you and your friends hours of fun. The idea of the game is to remove as many "bricks" as possible by

bouncing the ball against them. If you break through the bricks the game enters expert mode. Have fun!

CD-MAN. The purpose of this game is to clear the screen of dots while avoiding the nasties. By eating a pulsating energy pill the rolls are reversed and you can gain points by catching the fleeing monsters. Collect goodies that appear every now and again to give you bonus points.

DEMONS. Demons Tomb - The Awakening. This is an Adventure type game.

YAHTZEE. Same as the Yahtzee dice game that the TI'ers know so well.

IBM 23 GAMES #3:

HANGMAN. Again this is a similar game to the TI game. Educational game for children.

KEEN. In this game you play the roll of Billy Blaze, an eight year old kid genious, who builds an interstellar ship when not working at home on his college fast-track degree. At the hint of galactic trouble Billy becomes "Commander Keen" - defender of earth and his first adventure takes you to Mars where the Vorticon invasion force is planning their conquest of earth.

STICKYBR. This comprises of two games for the very young:

OPPS. Teaches children opposites of words and actions.

SHAPES. A program to help very young children to identify simple geometric shapes.

IBM 24 GAMES #4:

FOURNROW. Four in a Row. The object of this game is to connect four X's or O's in a row horizontal, vertical, or diagonal.

OILCAP. Haven't been able to figure this one out except to know that you have to build an oil pipeline that retains the oil. Time seems to run out before one can construct the pipeline. If anyone has mastered this one please write it up in the TND.

ROCKFORD. A game in which you must collect treasures as you move through the screen.

You drop rocks on the monsters to avoid being killed by them.

SHUFFLE. Crazy-shuffle. The object of this game is to match all LIKE pictures. A game designed to develop your memory powers.

SUB-688. 688 Attack Submarine. This game has two scenarios, the first is a training exercise and the second scenario is one in which you are being tailed by a Soviet Victor III class submarine, and your orders are to escape detection. This is a well documented program.

Bye for now.

END OF ARTICLE

TIsHUG software October 1994

By Larry saunders

Diskname G093
Used= 356 Free= 2

Games disk: Two games are BASIC only, marked with '*' all others are Extended Basic, some are Pre-Scanned.

BFLOWERS	16 Prog	CHARA1	9 Prog
KIDSTUFF	23 Prog	KWIKDRAW	27 Prog
LOAD	5 Prog	M1	2 Prog
M2	2 Prog	MARKSMAN	35 Prog
MISSMUFF*	12 Prog	MOUSEMAZE	14 Prog
POTPFGOLD	29 Prog	RIBBIT	21 Prog
ROOT	28 Prog	SCHOOLDAZE	19 Prog
SHAPEART	18 Prog	SLINKY	14 Prog
TIRKLE	20 Prog	TURTLEHOP*	41 Prog

Diskname P094
Used= 352 Free= 6

Page Pro Pictures

4TH	25 I 13	ANGEL	23 I 13
BASKET	18 I 13	BELL	5 I 13
BIRTHDAY	2 I 13	CANDLE1	17 I 13
CANDLE2	2 I 13	CHURCH	3 I 13
CTURKEY	17 I 13	CUPID	6 I 13
CUPID2	18 I 13	EGGS	14 I 13
FLAG	3 I 13	GREETING2	12 I 13
HEART1	2 I 13	HEART2	11 I 13
HOLLY	8 I 13	LIBRTBLL	3 I 13
MASKDANCE	26 I 13	MRYXMAS2	6 I 13
NEWYEAR	7 I 13	PARTY	22 I 13
ROSE	14 I 13	SANTA	16 I 13

```
TRKYDAY     19 I 13 VALENTINE   15 I 13
WINEGLSS     3 I 57 WNEQ!        6 I 13
XMASTREE1    2 I 13
```

Diskname AT095
Used= 703 Free= 15

TI-Artist Instances

```
ANGEL_I      26 d 80 BEAR_I      37 d 80
CARD_I       42 d 80 CAROLS_I    34 d 80
COUPLE_I     67 d 80 CUPID_I     52 d 80
ELF_I        30 d 80 FLAG_I      49 d 80
FROSTY_I     36 d 80 FWORKS_I    46 d 80
PRTRG1_I     26 d 80 PRTRG2_I    46 d 80

SNOWMAN_I    34 d 80 STOCKING_I  28 d 80
TREE_I       42 d 80 TRIKELF_I   41 d 80
VALEN_I      37 d 80 WINDOW_I    30 d 80
```

Diskname PO96
Used= 297 Free= 61

Page Pro Pictures these pictures converted from TI-Artist instances (Disk AT095)

```
ANGEL        13 I 13 BEAR        14 I 13
CARD         18 I 13 CAROLS      13 I 13
COUPLE       27 I 13 CUPID       24 I 13
ELF          12 I 13 FLAG        23 I 13
FROSTY       16 I 13 FWORKS      20 I 13
PRTRG1       13 I 13 PRTRG2      20 I 13
SNOWMAN      14 I 13 STOCKING    12 I 13
TREE         16 I 13 TRIKELF     16 I 13
VALEN        15 I 13 WINDOW      11 I 13
```

END OF ARTICLE

LEARN TO KNOW YOUR TI

LESSON 20

with Percy Harrison

This month we will try to show you how to make sounds on your TI.

The CALL SOUND command turns on from 1 to 4 voices. You can set the pitch and loudness of each voice and the duration (up to 4.25 seconds) of the whole combination.

The computer continues to execute instructions while the sound is being made. This is a very convenient feature of the TI 99/4A computer.

You have a choice of whether a new CALL SOUND command will cut off the existing sound or wait for it to end. If it waits, the execution of other program commands must wait too.

The number specifying pitch is actually the frequency in Hertz or cycles per second. Frequencies from 110 Hz (a low base note) to tones above human perception are allowed, in one Hz steps. The middle A for tuning an orchestra is 440 Hz.

A variety of noise sounds can be made by one voice, while up to three "musical" tones are also sounding.

The most interesting sounds will be made using several SOUND commands one after another to provide variation such as attack, sustain, and decay portions of sound.

When using sound in graphic situations, you get the most elaborate effects if you interweave the sound commands with the "move the graphics" commands.

You will find the DATA command covered in the last lesson very useful for storing the notes in music.

Enough of this waffling on, it's time to get you started on the actual lesson so that you will learn enough to enable you to experiment further and create your own sounds and use them effectively in programs that you create for yourself.

The TI 99/4A has four sound voices.

One voice can "sing" by itself, or two, three or four can "sing" at the same time.

You can pick one of the voices to be a "noise maker", with a choice of 8 kinds of noises.

Use them in music and sound effects like explosions, laser guns and wind etc.

MAKING MUSIC

Each CALL SOUND command picks one sound duration and 1, 2, 3, or 4 voices. Each voice has a pair of numbers giving its pitch and loudness.

Examples:

```
30 CALL SOUND(D,P,L)
30 CALL SOUND(D,P1,L1,P2,L2)
30 CALL SOUND(D,P1,L1,P2,L2,P3,L3)
30 CALL SOUND(D,P1,L1,P2,L2,P3,L3,P4,L4)
```

Variable	Value
D for "duration"	from 1 to 4250
P for "pitch"	from 110 to 44733
L for "loudness	from 0 to 30

DURATION

"Duration" means "how long the sound lasts".

The number D varies from 1 to 4250. Move the decimal over 3 places and D tells how many seconds the sound will last.

D= 500	half a second
D= 1000	1 second
D= 1500	1.5 seconds
D= 2000	2 seconds
D= ___ (fill in)	3 seconds
D= ___ (fill in)	4 seconds

PITCH

Pitch tells whether you have a "high note" or "low note". The bigger the number, the higher the pitch.

The pitch numbers are actually the frequency in Hertz or cycles per second. Only integers work for pitch numbers.

Small numbers give low tones. Large numbers give high notes, maybe so high only your dog or cat can hear them!

Here is a tempered scale of musical notes:

Note	Number
C (below middle C)	131
C#	139
D	147
D#	156
E	165
F	175
F#	185
G	196
G#	208
A	220
A#	233
B	247
C (middle C)	262
C#	277
D	294
D#	311
E	330
F	349
F#	370
G	392

G#	415
A	440
A#	466
B	494
C (above middle C)	523

Try this:

```
10 CALL SOUND(1000,440,0)
```

This plays "A above middle C" for one second.

Be forewarned, these notes may be a little out of tune but I don't think that bringing in a piano tuner will help any!

This is the reason:

	only integers are used in the SOUND command
but	decimal numbers are needed for notes in tune
and	the frequency played may be off by up to 10% from the frequency asked for.

You get very high notes for pitch numbers above 5000.

You may not be able to hear anything for pitch numbers above 1000, depending on just how good your hearing is.

LOUDNESS

Little numbers give loud sounds.

```
L = 30 sound is turned off
L = 10 sound is normal loudness
L =  0 sound is loudest
```

(Of course, you can turn up the TV to get a louder sound).

ONE VOICE

```
10 REM ONE VOICE
20 PRINT "ONE VOICE"
22 PRINT "HOW LONG? <1 TO 4250>"
23 INPUT D
25 PRINT "WHAT PITCH? <110 TO 10000>"
26 INPUT P
35 PRINT "HOW LOUD? <0 TO 30>"
36 INPUT L
40 CALL SOUND(D,P,L)
45 FOR T=1 TO 1000
46 NEXT T
50 GOTO 20
```

DUET

```
10 REM DUET
20 PRINT "TWO VOICES"
25 PRINT "PITCH 1"
26 INPUT P1
30 PRINT "PITCH 2"
31 INPUT P2
40 CALL SOUND(2000,P1,0,P2,0)
45 PRINT
46 PTINT
50 GOTO 20
```

DOING TWO THINGS AT ONCE

The TI computer makes sounds and computes at the same time!

You can move characters on the screen while the sound is still going. Most other personal computers can't easily do this.

Try this:

```
10 CALL CLEAR
20 CALL SOUND(4250,110,0)
30 FOR I=1 TO 15
33 PRINT I
36 NEXT I
40 CALL SOUND(4250,1000,0)
45 PRINT "SECOND"
50 CALL SOUND(4250,1000,0)
55 PRINT "THIRD"
```

Line 20 asks for a low note. While it is still sounding, the loop in lines 30 to 36 is also running.

Then the program gets to line 40 where a new sound is called for. But the computer waits until the sound from line 20 is over before starting the new tone.

While line 40's sound is going, the computer prints in line 45 (SECOND) and then waits at line 50 for the second sound to end.

Finally, the sound of line 50 is made, and the program prints "THIRD" and then ends.

The computer prints:

```
** DONE **
```

while the sound is still going!

SOMETIMES IT IS POLITE TO INTERRUPT

If you want the new sound to start right away and not wait for the old sound to end, then put a minus sign in front of its duration number.

Change line 50:

```
50 CALL SOUND(-4520,1000,0)
```

Run the program again and note that the high tone at the end cuts off the middle tone before it has run very long.

Now change line 40 by putting a minus sign in front of its duration number and run the program again.

MAKING NOISES

You make noises by choosing a "pitch" that is one of these negative numbers.

-1	periodic noise type 1
-2	periodic noise type 2
-3	periodic noise type 3
-4	periodic noise mixed with tone 3
-5	"white" noise type 1
-6	"white" noise type 2
-7	"white" noise type3
-8	"white" noise mixed with tone 3

Try this:

```
10 REM COMBINATIONS
20 FOR I=-1 TO -8 STEP -1
30 CALL SOUND(4000,I,0)
40 NEXT I
```

Run the program and observes what happens.

You are supposed to use noise -4 and -8 with one, two, or three other sounds.

Change line 30:

```
30 CALL SOUND(4000,I,0,500,10,600,10,700,10)
```

Run the program again and notice the difference that this change makes.

COMPLICATED SOUNDS

You can try combinations to see what sounds you like:

```
10 REM COMBINATIONS
15 S1=200
16 S2=1000
20 FOR I=1 TO 20
22 S1=S1*1.1
24 S2=S2*0.95
30 CALL SOUND(100,S1,0,S2,0)
40 NEXT I
```

Run this program. If you want the sound to repeat over
and over add the following command line:

```
50 goto 15
```

Assignment 20:

1. Make a list of sound effects. For each pitch number
   -1, -2, -3, -5, -6, and -7 tell what kind of
   sound you get. Try it together with other voices
   and tones. Think of a game or program which the
   sound would be good for.

2. Make the sound of: a truck horn
                        a laser gun
                        an explosion
                        a wind storm.

3. Write a program to play a short tune, like "Row,
   Row, Row your boat" or "Mary had a little Limb".
   Use a DATA statement to store the pitch numbers.

ANSWERS TO LESSON 19

Assignment Question 19-1

Program naming relatives.

```
10 REM RELATIVES
12 CALL CLEAR
20 PRINT "RELATION?"
21 PRINT
22 INPUT W$
23 PRINT
24 FLAG=0
29 RESTORE
30 READ R$
32 READ N$
34 IF R$="END" THEN 300
36 IF R$=W$ THEN 200
39 GOTO 30
90 DATA FATHER, WILLIAM
91 DATA MOTHER, ANNE
92 DATA SISTER, JOAN
93 DATA SISTER, SUSAN
94 DATA GRANDFATHER, JOHN
95 DATA GRANDMOTHER, ADA
96 DATA GRANDMOTHER, VIVIAN
```

```
97 DATA UNCLE, FRED
98 DATA UNCLE, GEORGE
99 DATA AUNT, MARY
100 DATA COUSIN, ROGER
110 DATA END,END
200 REM
201 REM PRINT IT
202 REM
210 PRINT R$;" ";N$
220 FLAG=1
299 GOTO 30
300 REM
301 REM NO RELATION
302 REM
310 IF FLAG=1 THEN 320
315 PRINT "YOU DO NOT HAVE A ";W$
320 FOR T=1 TO 200
321 NEXT T
399 GOTO 20
```

Note the use of the RESTORE statement in line 29. This
is to ensure that after each RELATION is keyed in and
the enter key is pressed the pointer is reset to the
beginning of the DATA statements.

Use is also made of the FLAG command which is not
generally covered by any of the TI manuals or textbooks.

Line 24 sets a FLAG=0 so that if a RELATION type is
entered that is not included in the program the pointer
searches through each DATA statement until it reaches
the last statement in line 110. This sets R$="END" in
line 34 and goes direct to line 300 where it prints out
the message "YOU DO NOT HAVE A " and then the type of
RELATION that you were searching for (line 315) and then
returns to the start of the program in readiness for the
next input. If however you type in a RELATION type that
is included in the program eg: AUNT, then the pointer
moves through the DATA statements until it finds the
DATA entries AUNT, MARY in line 99 and then continues on
through the program, printing out the RELATION type and
name (line 210) and then changes the FLAG equal to 1
(line 220) which causes the program to skip line 315
(because of the instruction it receives from line 310)
and after the time delay set by lines 320 and 321 it
returns to the beginning of the program.

This program could have been written with less line
numbers by putting more data on each line, for example
line 90 could be written as follows:

```
90 DATA FATHER, WILLIAM, MOTHER, ANNE, SISTER, JOAN,
SISTER, SUSAN, GRANDFATHER, JOHN, GRANDMOTHER, ADA,
GRANDMOTHER, VIVIAN
```

Lines 91 92, 93, 94, 95 and 96 could then be omitted.

It is important to note that where there is more than one RELATION of the same type in a DATA statement the RELATION type ie: SISTER in the modified line 90 must be repeated before the name of each syster etc.

Bye for now.

SEX CHANGE.....
IS IT NORMAL?

By Alan Silversteen

There were and are many times that I have tried to attach a non-standard RS232-C (serial) device to my TI99/4A. The 4A has its own protocol that sometimes requires a special cable just to see if a device will work.

To eliminate the multitude of cable requirements, I made several connectors that do gender switching and also allow me to switch from null to normal configuration on pins 2 and 3. All parts used are available from Radio Shack; the cost there is about $5:00 per connector, or, if you find a surplus dealer, the price is about $1:00 per connector.

Each connector consists of two DB25 connectors (either solder pot or crimp/insert type) and one double pole double throw (dpdt) slide switch. I standardized on the DB25 because the IBM DB-9 RS-232-C connectors can and usually is converted to a DB25 with a cable or connector for use with printers or modems.

To effect a gender change, use two male or two female DB25 connectors. To just have a null to normal switch, use one male and one female DB25 connector.

The normal RS-232-C uses pin 2 for transmit or recieve data signal and pin 3 for the opposite (I don't rember which is which, and it's reverse if the system is acting as a host or satellite). The DTDP switch makes a direct 2 to 2 and 3 to 3 connection in the normal mode and a 2 to 3 and 3 to 2 connection in the null mode.

Pins 1 and 7 are directly attached to there mating pin numbers in the other connector. For continuity I usually attach pins 6 to 6 and 20 to 20, but this is unnecessary except for some modem operations. The direct connect pins attached with about 2" of 18 or 26 guage solid conductor wire. The 2 and 3 pins are attached with about 3" of the same grade wire that comes from the switch.

After testing for continunity of the connections, I hot glue the two DB25 connectors together back to back with a gap of about 1/4 inch between them. When the hot glue has set, I glue the slide switch to the top center of this package over the 1/4 inch gap, potting the legs of the switch at this time. Care must be take not to get hot glue in the switsh mechanism, for this will prevent the switch from working properly.

The end result of all of this technical stuff is that after this connector is attached to the computer and the RS-232-C device and the appropriate device commands are given, the device should work. If it doesn't, then the null/normal switch is toggled and there is about a 95% chance it will now work. Best of luck!

DIAGRAM #1

```
            (Slide Switch Position)
                  (Normal)
Pin 2 of 2nd DB25 <--o1    4o-->Pin 3 of 2nd DB25
            also attached to leg 6


Pin 2 of 1st DB25 <--o2    5o-->Pin 3 of 1st DB25


Pin 3 of 2nd DB25 <--o3    6o-->Pin 2 of 2nd DB25
            also attached to leg 4
                   (NULL)
           (Slide Switch Position)
```
This is a bottom view of the switch, showing the destination of the wires.

DIAGRAM #2

```
1st DB25 connector     Switch        2nd DB25 connector
Pin No.                Leg No.                    Pin No
1 <-------------2"------------------------------------> 1
2 <-------------3"------> 2
                         1 <----------3"------------> 2
3 <-------------3"------> 5
                         4 <----------3"------------> 3
                       1<-->6
                       3<-->4
6 <-------------2"------------------------------------> 6
7 <-------------2"------------------------------------> 7
20 <------------2"------------------------------------> 20
```

<-------> = Represents wire and connecting points.
(NOTE: Use the manufacturer's numbers found on the DB25 connectors.)

This is an actual wire-pinout, showing the length of wires needed. The 1<-->6 and 3<-->4 are short pieces that just cross over the underside of the switch in an X shaped pattern without shorting to one another.

SHAHZADA ENDURANCE HORSE RIDE.

by Ross MUDIE, 10th September 1994.

I provided the computer system for the Shahzada Endurance Horse ride at St Albans NSW in August 1994. This was the 6th year that I have been involved in this unique event and each time my TI99/4A has been used as the event computer. This year the computer set up was very different to what I had done before because I took five TI99/4As instead of the previous two! The TIs were set up in a small Local Area Network (LAN), using a TI99/4A as the server and four TI99/4As as terminals.

In this article I am going to talk about:
(1) the way that the LAN is configured, hardware and software.
(2) discuss the conditions and the set up at the actual event.
(3) talk about some of the problems encountered.

The reason for going to the complexity of a LAN is that the event has grown over the years and needed to have data input from more than one keyboard, virtually simultaneously. There was a real need to be able to input or view data when a print out was occuring or while the back up was running. Data needed to be entered at the point where it was generated to avoid bottlenecks in the entry department and delays due to information having to be physically carried from the "source" area to the computer input area. I wasn't prepared to graduate to a PC system because of the cost involved and the fact that I would not have enough time to develop sufficient depth of understanding of a new system from when the decision was made to go to a LAN. The decision to go LAN was in March, with the event five months later in August. What ever computer system was running, I had to know it sufficiently well to be able to resolve software and hardware problems quickly enough not to allow problems to impact on the running of the event. (A comment made at the event by one of the people at the Time Keeper's area, who works daily with computers, that it would have cost about $25,000 in hardware and software to do what I did with the TIs at an outlay of about $500, since I personally developed the software).

The Shahzada consisted of two events, one inside the other. The main horse endurance event ran for 5 days, from 4am Monday 22nd August 1994 to 5pm on the next Friday. Riders and horses were travelling 80 km per day. The Training ride ran from Tuesday to Thursday with entrants doing 32 km on the first day, then 46 on the second and 48 km on the last day. The skill required by the riders and strappers is to keep the horse in sufficiently fit condition to pass twice daily veterinary scrutiny. The nested nature of the event meant that one terminal could be inputting time data for the main ride, another inputting names data for the training ride or horse pulse rates for the main ride, whilst a third was entering weight information at the scales used to weigh the horses and the rider plus saddle and other gear.

The computer system provided printouts of names and event data in both entrant number and sorted formats. At the end of the event the masters of a 64 page book of results was prepared, almost entirely produced on the TI99/4A system with the Canon Bubble Jet printer.

1. THE SERVER and THE TERMINALS.

The server for the LAN is a TI99/4A with PE box using extended basic. The PE box is equipped with two RS232 cards, 32K memory, Ramdisk, AT disk controller (double densitity), one disk drive and a Triple Tech card (which provides time of day clock and 64k printer buffer). A Canon BJ10e printer is used for high quality printing and a BX80 (dot matrix) printer is used for the system log. The second RS232 card is set to the second CRU address option which is >1500, (a standard feature provided by TI) and addressed as RS232/3 and RS232/4. The Parallel Port on this card is addressed as PIO/2.

All four terminals ran under extended basic. Two terminals used TI Peripheral Expansion (PE) boxes. The other two terminals used stand alone peripherals for the disk system and serial / parallel communications ports with 32k memory in the console. In addition to the two printers on the server, there were also another two printers driven from the Time Keeper's terminal. There were 2 Wang monitors, a colour TV set, Green Screen monitor and a "cute" little 130 mm B/W monochrome "ex-banking" monitor that I bought at Surplustronics in Auckland for just $10. The 130 mm monitor was the server screen. When all this gear was boxed up, along with the photocopier that Toshiba provided as a sponsorship, my long wheelbase Toyota Landcruiser was rather full.

The main program for the server was written in extended basic to get it up as quickly as possible (I only had a little over 3 months worth of "spare time" to make it all work). The system adopted was to sequentially scan the serial port DTR inputs and to action any "calling" input which had a positive voltage present. If more than one input is calling simultaneously then the inputs must be handled sequentially, in turn. The SCAN program was written in linked assembly language.

The interconnection between each terminal and the server was with 6 wires as follows.

```
        SERVER        CABLE        REMOTE TERMINAL

Protective Earth    1 ----->< -- 1  Protective Earth
        Rx Data     2 (14)-- <-- 3  Tx Data
        T|SDet ½yI Data
    Signal Earth    7 ----->< -- 7  Signal Earth
Data Carrier Detect 8 (12)-->-- 20  Data Terminal Ready
Data Terminal Ready 20 (19)-- <-- 8 Data Carrier Detect
```

[Numbers in brackets e.g., (14) show the pinout of the second RS232 port in each RS232 card. Arrows on the lines show the direction of signals between the server and the terminals.]

The serial cables between the server and the terminals were not shielded and the longest length of cable was approximately 75 metres (on the other side of the street from the server). The cables were strung up overhead and surge protection units were provided on each end of the cables, just in case something nasty occurred. There were no problems caused by the length of the cables between computers.

The principal of operation of the LAN is that every action is initiated by a terminal. The terminal can just send a command to the server or it can request information. The server program contains a large number of routines. The terminal requests a routine, followed by an entrant number, followed by optional data being sent into the server.

The handshaking between terminal and server is as follows:
When a terminal program attempts to PRINT to its RS232, it changes the Data Carrier Detect (DCD) output (pin 8) to a positive voltage. (The terminal DTR (pin 20) is however currently low from pin 8 of the server and no data is sent at this time.) The positive from the terminal DCD is detected by the server, when it comes around to the terminal during the SCAN routine, as a "calling terminal" and the SCAN routine sets the appropriate DCD pin 8 or 12 on the server end to a positive voltage. The resultant positive on the DTR pin 20 of the calling terminal then allows this terminal to send the data waiting as a result of the "PRINT to the RS232". The string of information is received in the assembly SCAN routine in the server and the resultant string is sent to the extended basic program of the server where it is broken into MODE, ENTRANT NUMBER and DATA. If the action requested by the MODE was to save the data, then the data is saved on the Randisk in the file dictated by the MODE and in the record in the file dictated by the ENTRANT NUMBER. If the MODE was a request for information, then the MODE would specify the

file and the ENTRANT NUMBER would specify the record number in the relative file. The server would deliver the appropriate data to the requesting terminal before continuing to scan the other terminals.

The files are set up on a Randisk for the best possible access speed. The amount of data in the files make it impossible to hold any data in the server RAM. The terminals can't hold anything in memory since if they did they may not have the latest information. The files are:

DATADAYx	5 files, 1 to 5 suffix used to store each entrants daily times, daily horse pulse and weight.
NAMESVETD	used to store names, addresses and pre-ride data.
FLAGS	used to store each entrant current status in the event.
POSITDAYx	stores a pointer list created by SORT in riding time order for end of day time ordered printout. (5 files)
POSITHDAYx	stores a pointer list created by SORT in riding time order for half day time ordered printout. (5 files)

When a batch application such as PRINT, BACKUP or SORT is invoked, an appropriate flag is set in the server so that the function can be treated in the same way as an additional calling terminel. Are broken up into one record per scan to allow other terminals or batch applications to be handled without having to use interrupts in the computer program. Once any batch application has been commenced by a terminal, the terminal is free to be used for other terminal functions which may include data entry, starting another batch application or cancelling an already running batch application.

Common terminal configuration data is maintained in the server and this is requested when the terminal programs first run. This includes the entrant number range used in the event, the current day of the event, the length of the legs of the event (which vary from day to day and leg to leg), etc. This saves having to change this type of information in every terminal individually.

There are a total of 21 different types of printout available in addition to the terminals having the ability to print on the Bubble Jet printer via the LAN. This feature is used when a sort will take too long in the server. In these cases, the data is read from the LAN into a terminal, sorted in the terminal and then printed back through the LAN. In total the server program contains 74 modes of operation.

When an entrant's data is about to be updated, the terminal calls up the appropriate record and busies the

entrant to prevent other terminals accessing the data for that entrant number in modify mode. (It is still possible to view a busy entrant data in VIEW mode). The data is then updated in the terminal, written back to the server, saved back to the Ramdisk and un-busied. The maximum string length for a record via the LAN is 255 bytes and the data communications occurs at 9600 bauds.

The terminal programs are written in extended basic with links to assembly as necessary. I found that extended basic LINPUT with a file did not set the DCD (pin 8) positive when the computer was ready to accept the input from the server. (This was required to complete the handshaking protocol between computers). This problem was very simply overcome with a very small linked assembly routine which simply turned the terminal's DCD on and off as required.

When a terminal was not plugged in to the serial port of the server or a terminal program was interrupted in operation by a FCTN clear, it was possible for the DTR line on that terminal input to the server to remain in a positive voltage state which was treated as a permanent call condition. This in turn would stop the scan program which stopped the operation of the LAN. To overcome this problem, wait on a "st uck high" input for 0.5 seconds and then resume the scan. If an input is found to be "stuck high" for 6 successive scans, it is "locked out" until it resets to low. In the locked out state an input is still tested once every scan, but the scan program does not wait for the 0.5 second period until it is reset to low for one scan. The self resetting nature of the software means that as soon as a terminal returns to normal, the server will start to handle it. The terminal lockout counter can also be reset from the server keyboard.

The server program includes handling of errors using ON ERROR. Errors are handled differently for fatal or non-fatal categories. When an error occurs the ON ERROR routines prints the error details on both the server terminal and the server logging printer. If the error is non fatal, the cause of the error does not get actioned which can result in a particular terminal becoming inoperative until its program is broken (FCTN CLEAR). This results in the rest of the LAN remaining in service. When an error which is deemed "fatal" occurs, details are printed on the logging printer and server screen and then the program reloads itself off the Ramdisk and runs again. It takes the LAN just under a minute to automatically recover from a fatal error.

The Time Keeper's computer was initially set up with a local logging printer, connection to the LAN and a printer at the secretary's table to deliver the ENTRANT OUT and IN times to the ride secretary for manual entry

in the vet cards or horse log books. The secretary's table was about 50 metres away from the Time Keeper and on the other side of the road. This feature saved a lot of walking backwards and forwards.

2. THE PHYSICAL SET UP.

The server, Bubble Jet printer, logging printer and the Main Terminal were all set up in my caravan which is especially equipped for this type of event. This equipment was powered from a 24 volt DC to 240 volt AC inverter which in turn was running off batteries under constant charge. Operation of the server and main terminal for at least 1 hour should have been possible if the mains power failed. This was intended to overcome a problem on a previous year when a short dip in the power which coincided with a write to the Ramdisk, corrupted the Ramdisk to the point that it had to be reformatted and the back up data loaded. This area in the caravan also represented the dryest and cleanest environment available at the event for computer equipment.

The Time Keeper's terminal and the Weighing Scales computer were both set up in horse floats on the other side of the street from my caravan. Horse floats have open sides up high and open back areas above the tail gate, so these had to be covered with tarpaulins to keep the rain out. Inside the horse floats, the computers were covered with individual small tarps, just in case the rain got inside. When it did rain the inside tarps were found to be very necessary since the rain did manage to get in!

All the tarps however were no match for the very high humidity of a 1 degree centigrade foggy morning and 25 to 30 degrees later in the day when the sun got up. The tarps also doubled as viewing hoods for the computer screens in the bright sunlight conditions.

An essential tool in setting up for computers in a horse float is a shovel to remove the horse droppings first! After the environmental conditions have been reduced to just dusty and not too squelchy 428 wires were terminated on site with soldering iron and pliers once the cables were in place.

A lot of attention was given to surge protection. Special surge protection units were constructed for the RS232 serial connections to both the server and the terminals. All of the 240 volt power was protected with surge limiting double adaptors or surge limiting multiple boards.

The fourth terminal was installed in the WICEN radio operators caravan. This provided a clean and well lit environment.

3. HOW DID IT REALLY PERFORM?

There were a number of teething problems, but the TI99/4A LAN did the job, a bit slowly, but at very moderate cost.

The unprecedented number of entrants caused several headaches. Even though the entrant number range was 1 to 220, many areas of the program were set up for 135 entrants maximum. This time there were 165 entrants! This dimensioning problem was a carry over from previous events where the whole program was contained in the one little TI99/4A and memory was really tight. This was quite fixable as the event went on.

I had managed to find time to hard wire some of the extended basic modules into their computers, these gave no trouble. Where the extended basic wasn't hard wired some problems were experienced with the connections to the extended basic cartridge.

A stand alone RS232, (TI boxcar unit), suffered from moisture ingress which caused corrosive growth between tracks of the lower PCB at a previous Shahzada. The problem was found and scraped clean prior to this Shahzada. Even though the computer was located in a tarped up horse float and covered with a tarp at night, there was still enough moisture in the air to cause a re-growth of the corrosive problem between the tracks and it failed in full sunlight conditions. That PC board has again been cleaned and coated with a protective lacquer to try to prevent a re-occurance of the problem (after the event). To overcome this problem quickly in the event, I did a quick re-configuration of equipment utilising spares which I had available on site and quickly made a "Y" cable adaptor for the RS232. Unfortunately this change did not allow continued use of the local logging printer at the time keeper because of the lack of a parallel cable or the parts to make one on the spot. The people using the Time Keeper's terminal were sufficiently familiar with the system to get by nicely without this printer at this stage of the event. After this the terminals in the horse floats were left powered up over night to maintain some warmth in the computers and T* *also failed to produce the goodsation. twice. The first was when the printer was moved by people from the Secretary's area and the serial cord was dislodged. The other case was a coat placed on top of the printer which jammed the paper.

The BX80 dot matrix log printer on the server was operated via 64k print buffer on the Triple Tech card which reduced the time taken to dump data towards the log buffer to full Parallel port speed. (The time taken for each logging print if the printer had not been buffered would have been unacceptable). The print buffer for the Bubble Jet printer was the 34k buffer in the Bubble Jet. Something that had to be watched carefully was that the Bubble Jet could not be left off line or let run out of paper or allow its buffer to fill up completely since any of these conditions would (and did) result in the LAN stopping because it could not proceed with a print via PIO/2.

The very high light levels in the radio caravan proved to be a problem with reading the monochrome green screen during the day. I will have to find a daylight readable screen for this position next year. The benefit of this terminal was further reduced by the fact that there was at times too long a delay in getting the scratching data into the LAN. It is planned to provide a terminal on the Secretary's table next year, to get the scratchings into the LAN as soon as the data is available. Printers off the secretary's terminal feeding the scratchings to the radio team and the Time Keeper will overcome this problem in next year's event.

The 24 volt DC to 240 volt AC inverter used as no break supply failed with a "dark brown smell". (This proved once again that electronic equipment runs on smoke and when the smoke escapes, it fails!) The server and main terminal were then switched over to normal mains supply for the rest of the event without problem. Its ironical that so often, the equipment especially provided to overcome a potential problem fails itself! Thankfully no data was lost this time.

The weighing scales computer was set up to take a direct RS232 input from the scales system. The printer output of the scales unit was not working properly and direct tranfer could not be used. Fortunately this program allowed direct input from the RS232 or the keyboard, off the scales unit screen and entered manually into the computer. There was a bug in the Scales program which allowed it to wipe off the address and post code data. This had to be found and fixed on the spot. It was caused by the fact that address and post code was a late addition to the data base and was not picked up before the event because time ran out for full testing of the programs. This problem resulted in manual re-entry of the lost data.

Another classic problem was the problem in the BACKUP ALL routine, which it was found didn't back up the NAMESVETD file properly and corrupted the NAMESVETD file that it was reading from. The alternate method, which already existed, was the use of routines which allowed the files to be individually backed up. This problem resulted in manual re-entry of data.

All of the computer equipment ended up with a layer of fine dust from the unsealed road and the paddock used as the vetting holding area. The problem was worst in the horse floats which were on the road side, but even the

"best" environment of my caravan could not escape the dust problem.

4. IN SUMMARY.

Regardless of all the problems, the end result of the computer involvement in the Shahzada was very successful at reasonable cost, in an event which was also very successful. Work is going on now to overcome the problems big and small whilst they are still fresh in the memory.

I hope that this article helps to inspire others to realise just what can be done with the old TI99/4A computer system. Some of the problems detailed may show that to be successful for this type of computer use, it is essential that you know the system well enough to be able to overcome problems on the spot.

The observations of two other people who helped with data entry at the event, who work with computers as their job (for me its just a hobby), was that the system just needed some fine tuning, and not replacement of the hardware with something newer, flashier or faster. I also wonder how many people would be happy to put their flashy new systems in the dusty by day, moist overnight environment in which the event operated.

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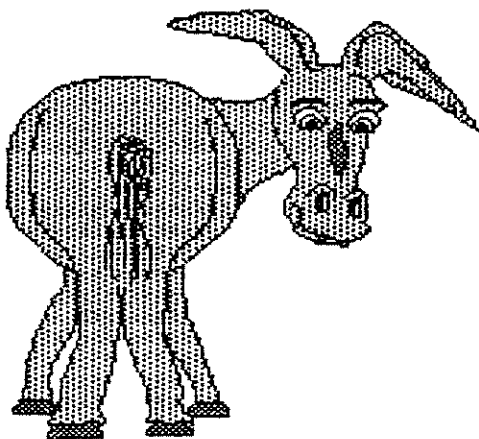

JUST A ONELINER (ED)

Q: Whats the closes thing to silver?

A: The Lone Ranger's bottom.

The TI/Non-TI Serial Hardware Connection

By Barry Traver
1994

Since TIers live in a world where other computers exist in addition to the TI99/4A, we sometimes fint ourselves in situations where we want to get our TI to communicate via RS232 either to a computer hardware device not specifically designed to work with the Ti or to an IBM (or to another non TI) computer. This is not always easy to do. (Someone, I think, in fact referred to this task as a "serial killer"!)

This month's column deals with a simple homemade hardware device that can greatly simplify the operation and increase liklihood of success. As some of you know, I am a genuine technoklutz. Fortunatly, however, I have a good friend, Alan Silversteen, who not only made a gadget for me but also agreed to share the instructions with me for publication in this article!

Before we move on such a description, however, let me mention how I myself found it to be very usefull. In our home, we have a TI99/4A and an IBM sitting next to each other, and I have been doing my best to get them on good speaking terms. Among other things, this means figuring out how to modify TI Extended BASIC programs so that they will run in QuickBASIC on the IBM (not too dificult, as long as sprites, speech, or multi-voice music are not involved). The first necessary step, however, is to get a text LISTing of the TI XB program from the TI to the IBM, because you can't do any modifying of the program on the IBM until you'v gotten the program to the IBM!

Here's the procedure. On the TI, load in a TI XB programe that you want to port over to the IBM, and LIST it to disk. Now you need to get that text over from a TI disk to an IBM disk. There are a number of ways to do this. One is to use a program by Mike Dodd called PC - Transfer (currently avaliable from Beery Miller of 9640 News). Bruce Harrison of Harrison Software also offers an inexpensive and useful product for bringing text from the TI to the IBM. A third way is to use a special cable to connect a TI and an IBM, RS232 to RS232, running terminal emulatation programs on each (eg Fast Term on the TI and Pro Comm on the IBM) and doing an "ASCII upload" from the TI to the IBM.

As I said, I'm a hardware technoklutz, but my good friend and hardware guru Alan Silversteen made for me a special connector that I use to connect the two normal cables that I already have hooked up to our TI and our IBM clone. Here's the way the computers are normally set up:

TI RS232 ----- Moden #1   Moden #2 ----- IBM RS232

And here's the way it looks when I want to send a TI XB LISTing from the TI to the IBM:

TI RS232 --- SPECIALLY BUILT CONNECTOR --- IBM RS232

Note: the two computers are communicating with no need of a modem! What this means is that I can up load text from the TI to the IBM at 9600 baud with no need of a 9600 baud modem (and no need of any modem at all!). If you're used to uploading or downloading at 1200 or 2400 baud, it is amazing to see how fast that material can move across at 9600 baud! (on the IBM clone, I just capture the incoming material in a buffer and log it to disk, editing the log at leisure later.)
If you look at the preceeding paragraph, you'll note that the connector I needed for this particular application involved the need of a "sex change" (hence Alan's title for his hardware description, which follows). In order to hook the two male ends of the cables together, what was necessary was to use two female DB25 connectors in the gadget he made for me. Also included in this gadget is a slide switch with two positions, "null" and "normal." As a hardware klutz, I never remember which position should be used for which application, but if it doesn't work one way, I just switch the switch to the other setting and the problem is normally solved. (Alan reassures me that I can't do any harm to my computer if I don't get it right the first time.)
Which DB25 connectors you use, of course, will depend upon what your intended application is. In my situation, two female DB25 connectors were needed, but equally useful might be a gadget with one male and one female DB25 connector (plus the same "null"/"normal" switch, of course). I think Alan mentioned, for example, the ability of hooking up the TI to a terminal using this gadget, but doubtless many possible uses involve hooking up the TI to other hardware through the serial port. This project is relatively simple, but one that you well may find invaluable.

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MPII INDEX for 1993

The 1993 installment of the MICROpendium II index by Bill Gaskill is now avaliable. The price for the disk is $6:00 which includes shipping.
The index covers January through December of 1993. It requires Microdex 99. MICROdex requires Extended BASIC, expansion memory and a disk system. A printer is recommended. The 1993 installment of the MPII index may be ordered from MICROpendium Index II, P.O. Box 1343, Round Rock, TX 78680.

Retyped from March 1994 MICROpendium
Asgard Software has officially discontinued selling the program First Draft/Final Copy as of Feb.18, according to Harry Brashear of the company.

Brashear says, "I deeply regret this decision, but after repeated attempts to get response from the author on two major bugs since June of 1993 and not getting any action on the problem, we are giving up. Though many people have found ways around the errors, my policy is that I will not Knowingly sell a product with bugs."

He request that anyone with questions regarding the program contact the author, "whose name and address appears on the first screen of the program." Previous advertising and announcements by Asgard list the author as Arthur Gibson.

Brashear says, "I am taking steps to insuer that this never happens again to any product I sell."

For information on other Asgard Software Products, contact the company at 2753 Main st., Newfane, NY 14108,(716)778-9104.

TREASURER'S REPORT

by Cyril Bohlsen

Income for previous month .... $ 998.00

Expenditure for previous month .. $ 735.41

Profit for previous month .... $ 262.59

Membership accounted for $ 70.00 of Income.

Shop sales .... $ 928.00 of Income.

The expenditure was made up of the following

Printing & Postage of TND .... $ 273.59

Purchase of 80 Column Card Parts . $ 219.82

GIO Insurance .... $ 145.00
        We wish to welcome to the club

Lew Griffiths of Old Bar NSW.

Also to welcome back into the fold

Lou Amadia of Figtree NSW.

SCREEN DESIGNER

By Mike Slattery

This program allows you to design a screen of text and save it to disk in a format which can be assembled immediatly without having to type in the program or data . First you enter the number of screens you want to design. Then you enter the link name for the first screen. This can be any name upto three chars long. The program will add a digit to this name and will increment this for each following screen. Finally you enter the drive and filename to save the source code under. Now you design the layout of the screen using any valid ascii code, redefined keys will be displayed as the origanal code.

```
100 ! THIS VERSION 17/5/86
110 DIM LINE$(24),RESULT$(24),POSIT(24
),LENGTH(24),LINE(24)
120 DISPLAY AT(1,2)ERASE ALL:"TEXT  SC
REEN DESIGNER": :TAB(13);"by": :TAB(7)
;"MIKE SLATTERY"
130 DISPLAY AT(9,1):"DO YOU WANT INSTR
UCTIONS N"
140 ACCEPT AT(9,27)VALIDATE("YN")SIZE(
-1):A$ :: IF A$="Y" THEN 900
150 DISPLAY AT(9,1):"DO YUO WANT OUTPU
T TO": :"1 DISK AND PRINTER":"2 PRINTE
R" :"3 DISK": :"SELECT A NUMBER 3"
160 ACCEPT AT(15,18)VALIDATE("123")SIZ
E(-1):BOTH
170 DISPLAY AT(9,1):"PLEASE ENTER THE
NUMBER OF": :"SCREENS TO BE DESIGNED 1
":"" : :"":"":"":"" :: ACCEPT AT(11,24)VALI
DATE(DIGIT)SIZE(-1):SC$
180 DISPLAY AT(9,1):"PLEASE ENTER THE
LINK NAME": :"FOR THE FIRST SCREEN SCR
" :: ACCEPT AT(11,22)SIZE(-3):SC$
190 DISPLAY AT(9,1):"DO YOU WANT A CAL
L CLEAR":"BEFORE EACH SCREEN. Y/N Y":
:"NOTE THIS WILL APPLY TO ALL":"OF TH
E SCREENS." :: ACCEPT AT(10,25)SIZE(-1
)VALIDATE ("YN"):CLR$
200 IF BOTH=2 THEN 240
210 DISPLAY AT(9,4)ERASE ALL:"PLEASE E
NTER DRIVE AND":" FILENAME TO SAVE DAT
A 0":"":TAB(9);"DSK1.DATA-S"
220 ACCEPT AT(12,12)SIZE(-12):FNAME$ :
: FNAME$="DSK"&FNAME$ :: CALL CLEAR :
: CT= 65
230 OPEN #1:FNAME$,DISPLAY ,VARIABLE 8
0,OUTPUT :: IF BOTH=3 THEN 250
240 OPEN #2:"PIO"
250 A$="    DEF " :: FOR P=1 TO SCS
-1 :: A$=A$&SCS$&STR$(P)&"," :: NEX
T P :: A$=A$&SCS$&STR$(P):: IF BOTH=
2 THEN 270
260 PRINT #1:A$ :: IF BOTH=3 THEN 280
270 PRINT #2:A$
280 IF BOTH=2 THEN 300
290 PRINT #1:"VSBW   EQU >2020" :: PRI
NT #1:"VMBW EQU >2024" :: IF BOTH=3 TH
EN 310
300 PRINT #2:"VSBW EQU :2020" :: PRINT
#2:"VMBW EQU >2024"
310 FOR P=1 TO SCS :: A$=SCS$&STR$(P)
&RPT$(" ",6-LEN(SCS$))&"B @"&SCS$
"R"&STR$( P):: IF BOTH=3 THEN 330
320 NEXT P
340 FOR M=1 TO SCS :: CALL CLEAR :: CT
=65
350 A$="123456789012345678901234567 8"
360 FOR C=1 TO 24 :: A=ASC(SEG$(A$,C,1
)):: CALL HCHAR(C,2,4):: NEXT C
370 DISPLAY AT(24,1):A$
380 FOR P=1 TO 24 :: IF P=24 THEN DISP
LAY AT(24,1):""
390 ACCEPT AT(P,1)SIZE(-28):L$ :: IF L
$="" THEN 400 :: A=ASC(SEG$(L$,I,1)):
IF A>126 THEN DISPLAY AT(P,1):LINE$(P)
:: P=25 :: GOTO 410
400 LINE$(P)=L$ :: NEXT
410 DISPLAY AT(24,1):"IS SCREEN CORREC
T Y/N N" :: ACCEPT AT(24,23)SIZE(-1)VA
LIDA TE("YN"):A$ :: IF A$="N" THEN DIS
PLAY AT(24,1):LINE$(24):: GOTO 380
420 DISPLAY AT(24,1):"WORKING - PLEASE
BE PATIENT"
430 FOR P=1 TO 24 :: IF LINE$(P)="" TH
EN 490 :: A$=LINE$(P)
440 FOR T=1 TO LEN(A$):: B$=SEG$(A$,T,
1):: IF B$<>" " THEN 460
450 NEXT T :: GOTO 490
460 IF T=1 THEN 470 :: LINE$(P)=SEG$(A
$,T,28):: LENGTH(P)=LEN(A$)-T+1 :: GOT
O 48 0
470 LENGTH(P)=LEN(A$)
480 POSIT(P)=((P-1)+T+1 :: RESULT$
(P)=CHR$(64+M)&CHR$(CT):: CT=CT+1
490 NEXT P
500 CT=65
510 FOR P=1 TO 24 :: IF LINE$(P)="" TH
EN 590

520 NCT=NCT+1 :: F$=CHR$(64+M)&CHR$(C
T)&"   BYTE "
530 FOR Q=1 TO LEN(LINE$(P))STEP 7
540 FOR W=0 TO 6 :: IF Q+W>LEN(LINE$(P
))THEN 560 :: A=ASC(SEG$(LINE$(P),Q+W,
1)):: D$=D$&STR$(S+96)&","
550 G$=SEG$(D$,1,LEN(D$)-1):: NEXT W
560 IF BOTH=2 THEN 570 :: PRINT #1:G$
:: IF BOTH=3 THEN 580
570 PRINT #2:G$
580 F$="     BYTE " :: D$="" :: NEXT
Q :: CT=CT+1
590 NEXT P
600 G$="TABLE"&STR$(M)&" DATA "
610 FOR P=1 TO 24 :: IF LINE$(P)="" TH
EN 650
620 F$=G$&RESULT$(P)&","&STR$(POSIT
(P))&","&STR$(LENGTH(P)):: IF BOTH=2
THEN 630 :: PRINT #1:F$ :: IF BOTH=3 T
HEN 640
630 PRINT #2:F$
640 G$="    DATA "
650 NEXT P :: LINE(M)=NCT :: NCT=0 ::
FOR Y=1 TO 24 :: LINE$(Y)="" :: NEXT Y
:: NEXT M
660 FOR P=1 TO SCS :: A$=SCS$&"R"&ST
R$(P):: IF CLR$="N" THEN 750
670 IF BOTH=2 THEN 710 :: PRINT #1:A$
RPT$(" ",5-LEN(SCS$))&"LI R0,767" ::
PRINT #1:"      LI R1,>8000"
680 PRINT #1:"ZQ"&STR$(P)&"   BLWP
@VSBW" :: PRINT #1:"      DEC R0"
:: PRIN T #1:"      JNE ZQ"&STR$(P)
690 PRINT #1:"      BLWP @VSBW"
700 PRINT #1:"      LI R5,"&STR$(LINE
(P)):: IF BOTH=3 THEN 770
710 PRINT #2:A$&RPT$(" ",5-LEN(SCS$))
&"LI R0,767" :: PRINT #2:"      LI
R1,>8 000"
720 PRINT #2:"ZQ"&STR$(P)&"   BLWP
@VSBW" :: PRINT #2:"      DEC R0" :
: PRINT #2:"      JNE ZQ" STR$(P)
730 PRINT #2:"      BLWP @VSBW"
740 PRINT #2:"      LI R5,"&STR$(LIN
E(P)):: GOTO 770
750 IF BOTH=2 THEN 760 :: PRINT #1:A$
RPT$(" ",5-LEN(SCS$))&"LI R5,"&STR$
(LINE(P )):: IF BOTH=3 THEN 770
760 PRINT #2:A$&RPT$(" ",5-LEN(SCS$))
&"LI R5,"&STR$(LINE(P))
770 IF BOTH=2 THEN 790 :: PRINT #1:"
LI R4,TABLE"&STR$(P):: IF P=SCS
THEN 780 :: PRINT #1:"      JMP RET"
780 IF BOTH=3 THEN 800
790 PRINT #2:"      LI R4,TABLE"&STR
$(P):: IF P=SCS THEN 800 :: PRINT #2:"
JMP RET"
800 NEXT P
```

810 IF BOTH=2 THEN 840 :: PRINT #1:"RE
T - MOV *4+,1" :: PRINT #1:"   M
OV 4+,0" :: PRINT #1:"   MOV*4+,2
"
820 PRINT #1:"   BLWP @VMBW" :: P
RINT #1:"   DEC R5" :: PRINT #1:"
        JNE RET"
830 PRINT #1:"   CLR R0" :: PRINT
#1:"   MOVB R0,@>837C" :: PRINT
#1:"   RT" :: PRINT #1:"
END" :: IF BOTH=3 THEN 870
840 PRINT #2:"RET   MOV *4+,1" :: PR
INT #2:"   MOV *4+,0" :: PRINT #
2:"   MOV *4+,2"
850 PRINT #2:"   BLWP @VMBW" ::
PRINT #2:"   DEC R5" :: PRINT #2:
"   JNE RET"
860 PRINT #2:"   CLR R0" :: PRINT
#2:"   MOVB R0,@>837C" :: PRINT
#2:"   RT" :: PRINT #2:"
END"
870 IF BOTH=2 THEN 880 :: CLOSE #1 ::
IF BOTH=3 THEN 890
880 CLOSE #2
890 END
900 DISPLAY AT(1,1)ERASE ALL:"THIS PRO
GRAM ALLOWS YOU TO":"DESIGN A SCREEN O
F TEXT AND":"SAVE IT TO DISK IN A FOR

MAT":"WHICH CAN BE ASSEMBLED IMM-"
910 DISPLAY AT(5,1):"EDIATLY WITHOUT H
AVING TO":"TYPE IN THE PROGRAM OR DATA
CREENS YOU WANT TO"
920 DISPLAY AT(9,1):"DESIGN. THEN YOU
ENTER THE":"LINK NAME FOR THE FIRST":"
SCRE EN. THIS CAN BE ANY NAME":"UPTO T
HREE CHARS LONG. THE""PROGRAM WILL ADD
A DIGIT TO"
930 DISPLAY AT(14,1):"THIS NAME AND WI
LL INCREMENT":"THIS FOR EACH FOLLOWING
":"S CREEN. FINALLY YOU ENTER":"THE DR
IVE AND FILENAME TO":"SAVE THE SOURCE
CODE UNDE R."
940 DISPLAY AT(19,1):"NOW YOU DESIGN T
HE LAYOUT OF":"THE SCREEN USING ANY VA
LID ":"ASCII CODE. REDEFINED KEYS":"WI
LL BE DISPLAYED AS THE":"ORIGANAL CODE
950 DISPLAY AT(1,1)ERASE ALL:"NOW ENTE
R ONE LONE AT A TIME"
960 DISPLAY AT(2,1):"AND IF YOU WANT T
O LEAVE A":"LINE BLANK SIMPLY PRESS":"
ENTE R. TO TAB ACROSS TO A":"START POS
ITION AWAY FROM":"COLUMN 1, USE THE SP
ACE BAR."
970 DISPLAY AT(7,1):"USING FCTN D TO T
AB ACROSS":"WILL CAUSE THE TEXT TO BE"
:"IN CORRECTLY LOCATED BY THE":"PROGRA
M. ENTER CTRL(ANY KEY)":"TO SKIP TO T

HE PROMPT. "
980 DISPLAY AT(12,1):"WHEN THE SCREEN
IS COMPLETE":"CONFIRM AT THE PROMPT AN
D":" THE PROGRAM WILL THEN BEGIN":"TO
TRANSFER THE DATA TO DISK"
990 DISPLAY AT(17,1):"LOAD IN THE E/A
AND ASSEMBLE":"USING ONLY 'R' IN THE O
PTIO N":"FIELD WHEN PROMPTED.":"THE FO
LLOWING LINE USED IN":"AN EXTENDED BAS
IC PROGRA M"
1000 DISPLAY AT(22,1):"WILL PRINT THE
SCREEN." :: GOSUB 1050
1010 DISPLAY AT(1,1)ERASE ALL:"CALL IN
IT::CALL OAD('DSK?.":"FILENAME')::CALL
LIN K('SC1')": :"NOTE - USE DOUBLE QUO
TES IN":"YOUR PROGRAM, NOT SINGLE":"QU
OTES AS ABOVE."
1020 DISPLAY AT(8,1):"GOOD LUCK": :"MI
KE SLATTERY": :"TISHUG SYDNEY" :: GOSU
B 10 50
1030 DISPLAY AT(1,2)ERASE ALL:"TEXT
SCREEN   DESIGNER" :TAB(13);"by": :TA
B(7);"MIKE SLATTERY" :: GOTO 150
1040 END
1050 DISPLAY AT(24,1):"PRESS ANY KEY T
O CONTINUE"
1060 CALL KEY(0,Q,W):: IF W=0 THEN 106
0 :: RETURN

END OF ARTICLE

PUZZLE

This months list of words is based around the subject
of "Christhan Names"

```
B I H D E X B N J S F I K V W C J U N D
G D J U R J D L Q E E B R O X A N N S M
H Q D V I Z R Z H J A D E E S Y R G V A
N S X A L L I A X S I V A M N R P R W R
V E H R J J N H J T S A A K N E A P E Y
C K Y Q Q N A E C S R U E Q X F S N J N
F F H S A F L P U U B V X P C H E C B Z
G Z A H N L T U H P I C S Q A R V I C S
F Q M S C T E Y C N T Z R R O R F G D J
C H G T O N S P I A L I O L W X B P C Z
L L P C I W F R V S S N M A J E M N L A
X O S T B M R A L Y P Q Y I Y Z M U Q J
G R R G L B M E Y O N V K B A D U M Y R
U A O O C E M Y E G B N U Q O Q U E A C
M C X Q R W I J Y V O H L H T R L J H E
I T K X U C D S E C B G D N O L Q T N T
I Y G M E D Y H L S H I W P E Z V L A J
Y R U C W V Q O X H S A M H U T P S G M
I K G L T F M G K H D Y S J O J I Y H L
K S O H M Z N E D Z B U Y W L L Y H X Y
```

Find these hidden words

NOW TO PLAY

In this puzzle there are (20) words somewhere,
horizontally, vertically, diagonally even backwards.
Find the words and place them in the place
provided.
The answers will appear in next months magazine.
GOOD LUCK!

1.___(3)   2.____(5)   3.___(4)
4.____(6)   5.__(3)   6.____(5)
7.____(5)   8.___(4)   9.____(5)
10.___(4)   11.____(5)   12.____(5)
13.____(6)   14.___(4)   15.____(5)
16.____(5)   17.____(5)   18.____(6)
19._____(7) 20._____(6)

This puzzle was compiled using Ashley Lynn's programme
"Word Puzzle" which is avaliable from the TIsHUG shop.

Last months list of words, based around the subject of
"birds" were.....

PIDGEON	SPARROW	FINCH
DOVE	WREN	GALAH
BUDGIE	MYNAH	GULL
EMU	EAGLE	ROSELLA
CROW	DUCK	SWALLOW
WAGTAIL	KIWI	TERN
ALBATROSS		
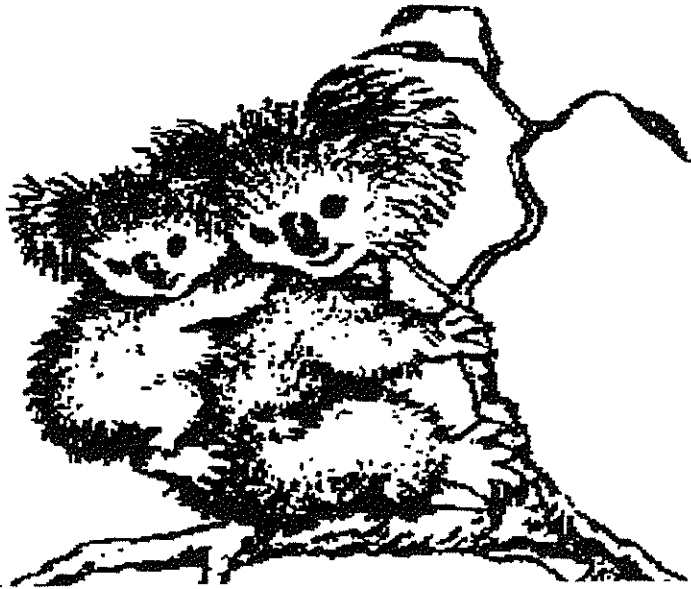
RAMID Modification Bypasses Password

Bruce Harrison of Hyattsville, Maryland, offers the following modifications of William H. Berendts' RAMID program, which appeared in our May 1994 issue (under the heading of Security of RAMdisks). Harrison writes that Berendts had come up with an interesting little concept for "securing" one's TI system by having the RAMdisk run an extended BASIC program which would require entering a password before allowing the RAMdisk's Menu to come up. His program would, of course, work, but it would keep comning back to the password program any time the system cycled back to the title screen. Here's a short XB program that overcomes that problem. Once this has run, and a correct password has been entered, it clears a byte of memory in the Load Interrupt area. CALL LOAD(-2,0), Which contains >FF on cold startup. Thus when next we cycle through the title screen, the program finds 0 at location -2 and so skips right ahead to Menu. So long as XB is avaliable (as is on systems with P-GRAM as well as RAMdisk), this will work correctly. It wont make you reenter the password unless the P-Box has been shut off or some program has changed the memory byte at >FFFE. (Almost all programs leave that part of memory alone. It's of no use to anyone without a Load Interrupt switch.)

To use this, simply type it in under Extended BASIC, change the password in line 10 (e.g. PW$="ANGRY CAT"), then save it to the same RAMdisk drive as your Menu program is on. Give it a short file name (e.g. DSK5.PW). Now go into Horizon's Configure utility and edit your ROS so that 4 MENU is the second item on the calls list, and make the first item 2 PW. Shut your system down and fire it up again. Instead of the Menu, you'll get the prompt for a password. Type in yours, and the normal Menu should appear. So long as you don't shut off the P-Box, you can do anything you want without seeing the password request again. That's it. Enjoy. Should you forget your password, there's a backdoor method of getting into your computer. Call me at (301)277-3467 to find out.

The two drawbacks to this are that you need XB present to make it work, and anyone can see the password while you're typing it in. I am making an Assembly version that will overcome both problems. That Assembly disk will be made available through Lima and other User Groups.

```
10 ON BREAK NEXT :: PW$="PEN
TAGON" :: CALL INIT
20 CALL PEEK(-2,A):: IF A TH
EN 30 ELSE DELETE "MENU"
30 DISPLAY AT(12,1)ERASE ALL
:"TYPE YOUR PASSWORD" :: ACC
EPT AT(14,1)BEEP:ENT$ :: IF
ENT$<>PW$ THEN 30
40 CALL LOAD(-2,0):: DELETE
"MENU"
```

END OF ARTICLE
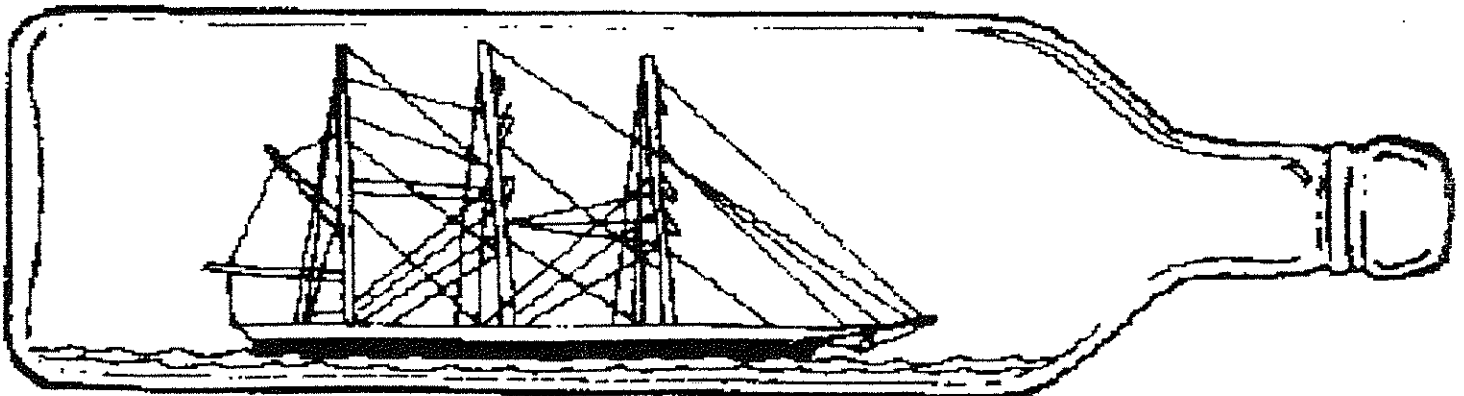
Let's look at a slightly more complicated formula, such as the first one we entered for B9:

+B2*B1/12

This means that AS-EASY-AS takes what is in B2, multiplies it by the value in B1, divides that whole product by 12, and then places the total result into B9.

Let's add some more formulas. Place the cursor in B10.

Enter:

+D9*$B$1/12	Calculates interest
<Cursor Right>	To C10
+$B$4-B9	Calculates principal
<Cursor Right>	To D10
+D9-C10	Calculates remaining principal
<Cursor Right>	To E10
+E9+B10	Calculates total interest paid
<Cursor Right>	To F10
+F9+C10	Calculates total principal paid
<Enter>	Last step

3.7 Cell addresses (relative and absolute)

You're probably wondering what it means when you enter something like "$B$1" as part of the formula. When copying, AS-EASY-AS will change the cell addresses. For example, the +D9*$B$1/12 formula becomes +D10*$B$1/12.

Notice that the cell address B1 wasn't changed. This cell address was specified as *absolute* (or unchangeable) by entering $B$1. This reference cell remains the same when it has been specified as absolue. We'll further explain relative and absolute cell addresses later.

3.8 Range copy

Next you'll need to use the range copy commands to copy some of the formulas into different cells. Move the cursor to B10 and then press </> to access the main menu.

Enter:

CopyCell	Copying option (starts copying from B10)
<Cursor Right>	To F10 (copies all the formulas from B10 to F10)
Press <Enter>	Execute the command (the cursor returns to B10)
<Cursor Down>	To B11 to extend the end of the range to be copied.
Press <.> (period)	Extend the range ("Copy Cells To" should now be "B11..B11")
<Cursor Right>	To F11 (defines one side of the range)
<Cursor Down>	To F20 (defines the bottom of the range)
<Enter>	Execute the command

Now you should have a series of "ERR" messages from B10 to F20.

You can see how the range copy commands can make your work easier. Entries that are needed in different parts of the worksheet don't have to be entered a second time.

This is also where absolute addresses are helpful. When you enter a formula with an absolute address, such as $B$1, then the value of that specific reference point won't be changed when you perform a range copy.

3.9 Applications

Your worksheet "Loan payment schedule" is now ready and you can begin to enter figures. The interest rate at B1 must be entered as a decimal (for example, 0.12 = 12%). Also, if you enter a figure that is higher than 9999, a series of asterisks ("*******") will appear in B2 and probably in column D. You can adjust this by changing the column widths for B and D as you did when you first set up the worksheet.

Be careful not to enter numbers into cells that already contain formulas. Otherwise the original formulas will be erased. We'll show you how to protect ranges in the following subsection.

3.10 Range protect

AS-EASY-AS allows you to select which ranges or cells you want to protect from changes. This protection can cover either the entire worksheet (global protect) or only certain cells.

Global protection is switched off as a default in AS-EASY-AS. This enables you to make changes to any cell regardless of whether it's protected. In order to protect certain ranges or cells, first you have to activate global protect and then select the ranges you want protected.

Press </> to access the main menu:

WSheet	Worksheet command
General	General command
Protect	Protect command
Enable	Global protect on

Then move the cursor on B1 and return to the main menu):

Range	Range command
Lock	Lock command
No	Changes are allowed within range
<Cursor Down>	To B3 (lets you make changes from B1 to B3)
<Enter>	Execute the command

You can, by entering "Yes" under the lock command, create a range of cells in which you don't want to make changes.

3.11 Saving your worksheet

You should save your worksheet often. This can be done from the main menu.

Enter:	
File	File command
Store	This is the save option. Enter the filename
<Enter>	Perform the command to accept the filename
<Enter>	Execute the command

4 Introduction to Graphics

Besides using AS-EASY-AS for regular spreadsheet calculations, you can also display your data in graphic form. Several different graphs are available:

Line graphs

Bar graphs

XY charts

Pie charts

Press </> to access the main menu. You'll see a list of several options for designing specific types of graphs.

```
F1:Help 2:Edit 3:Macro 4:Abs -Graph- 5:Goto 6:Window 7:Wp 9:Calc F10:Graph
X-Y,Bar,Pie,Stack,Line,Cum,Hloc,Radar,Area,Delta
GRAPHICS
   I.......B/.......CI........DI.......EI........FI........GI....
Type    t    14.50%
X       $6,000.00
A       36 months
B       $206.53 monthly
C
D
E       Interest  Principal Remaining  Total     Total
        Paid      Paid      Principal  Interest  Principal
F
Labels    $72.50  $134.03  $5,865.97    $72.50    $134.03
Options   $70.88  $134.03  $5,731.85   $143.38    $268.05
Reset     $69.26  $135.65  $5,596.30   $212.64    $403.70
Name      $67.62  $137.26  $5,459.04   $280.26    $540.96
View      $65.96   $38.90  $5,320.19   $346.23    $679.87
Plot      $64.28   $40.56  $5,179.57   $410.51    $820.43
Quit      $62.59   $42.24  $5,037.33   $473.10    $962.67
          $60.87  $143.94  $4,893.39   $533.97  $1,106.61
          $59.13  $145.66  $4,747.73   $593.09  $1,252.27
          $57.37  $147.40  $4,600.34   $650.46  $1,399.66
          $55.59  $149.16  $4,451.18   $706.05  $1,548.82
19  11    $53.79  $150.94  $4,300.24   $759.84  $1,699.76
20  12
Free: 98% [261k]  Auto PDBOOK.WKS              Num       10:26:12 am
```

The Graphics Menu

4.1 Designing a bar graph

Let's make a bar graph from the worksheet you created in the previous section. Press </> to access the main menu.

Enter:	
Graphics	Graphics command
Type	Choose what kind of graphics
Bar	Bar graph command (returns to graphics menu)
A	To set up first Y-range (vertical range on graph)
Cursor on C9	Start of Y-range
. (period)	Extend the range
Cursor on C20	End of Y-range (sets up principal paid as first vertical range—goes back to graphics menu)
B	To set up second Y-range
Cursor on D9	Start of second Y-range
. (period)	Extend the range
Cursor on D20	End of Y-range (sets up remaining principal as second Y-range)

Bar graph labeling

(Continue from Graphics menu)	
Options	Options menu
Legend	Set up legends or labels for each range
A	Define Legend for Range A
Enter:	
Principal Paid <Enter>	
Legend	Set up legend
B	Define legend for Range B
Remaining Principal <Enter>	

Define the X-Axis

X	Set up X-axis (horizontal range on graph)
Cursor on A9	Start of X-axis
. (period)	Extend the range
Cursor on A20	End range of X-axis

Name the graph

(Continue from Graphics menu)

Name	Name option
Create	Enter the following name for the graph:
	Bar

You can preview the graph by selecting the "View" option from the Graphics menu.

Print the graph

(Continue from Graphics menu)

Plot	Plotting option
GO	Start printing

When the printing is complete:

Quit	Exit the print operation
Quit	Exit the graph operation

You can store a spreadsheet with graphs the same way you store a normal spreadsheet. Select "File" and "Store" from the main menu.

Activate grid of coordinates

(Continue from Options menu)

Grid	Grid command
Both	Set up both vertical and horizontal lines

Activate Scaling

(Continue from Options menu)

Scale	Scale command
X-Scale	Set up scaling for X-axis
Auto	Automatic scaling
Quit	Exit the menu (go back to Scale menu)
Y-Scale	Set up scaling for Y-Axis
Auto	Automatic scaling
Quit	End operation (repeat this step to return to Options menu)

Add titles

Titles	Titles command
First	Enter the following for the main title and press <Enter>
	Loan Payment Schedule
Second	Enter the following for the second title and press <Enter>
	Remaining Debt
Quit	End operation (repeat this step to return to Graphics menu)

REGIONAL GROUP REPORTS

Meeting Summary For SEPTEMBER

Central Coast	08/10/94	Saratoga
Glebe	06/10/94	Glebe
Hunter Valley	09/10 16/10/94	
Illawarra	11/10/94	Keiraville
Liverpool	07/10/94	Yagoona West
Sutherland	14/10/94	Jannali

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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 Welhan (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.

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HUNTER VALLEY Regional Group
The Meetings are usually held on the second or third Sunday of each month at members homes starting at 3pm. Check the location with Geoff Phillips by leaving a message on (049) 428 617. Please note that the previous phone number (049) 428 176 is now used exclusively by the ZZAP BBS which also has TI support. Geoff.

=====================================

ILLAWARRA Regional Group
Regular meetings are normally held on the second Tuesday of each month after the TIsHUG Sydney meeting 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. Contact Geoff Trott on (042) 29 6629 for more information.

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* LIVERPOOL Regional Group *

Regular meeting date is the Friday folling the TIshug Sydney meeting at 7.30 pm. Contact Larry Saunders (02) 644-7377 (home). Mum will let you know were I am or when I will be home.

NOTE: I will be doing relief managering at several stores, and will not be easy to reach during the day. Some of the stores I will be managering trade to 10pm/11pm/12pm and I am working up to 14 hours a day, 5 days a week.

*** ALL WELCOME ***

7th October 1994
11th November 1994
My Place : 34 Colechin St. Yagoona West

Bye for now Larry.
Liverpool Regional Co-Ordinator

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SUTHERLAND Regional Group
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.

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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 MEADOWBANK PRIMARY SCHOOL, on the corner of Thistle Street and Belmore Street, Meadowbank. Cars can enter from Gale Street and park in the school grounds. Regular items include news from the directors, the publications library, the shop, and demonstrations of monthly software.

OCTOBER MEETING - 1st OCTOBER

NOVEMBER MEETING -5th NOVEMBER
****

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

November - 15th October
December - 12th November

These dates are all Saturdays and there is no guarantee that they will make the magazine unless they are

uploaded by 6:00 pm, at the latest. Longer articles should be to hand well before the above dates to ensure there is time to edit them.

****

DON'T FORGET AT THE NOVEMBER MEETING BUY, SWAP or SELL

****