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TIsHUG News Digest

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TIsHUG Sydney Meeting
The June Meeting will start at
2.0 pm on the 4th June 1994
at Meadowbank Primary School,
Thistle Street, Meadowbank.

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COORDINATOR'S REPORT

I thought that today, I would talk about something quite different from our usual TI related topics. I have recently read some articles about research into Electromatic Pollution. I was quite surprised with what I have learned. If we think about more recent developments with electricity and electronics, it is clear that there has been an incredible explosion of electronic devices, including computers. Electricity has become an indispensable part of our life. Just today, I pulled into a garage to fill up, but could not do so simply because of a local blackout. All the local businesses were affected, garages, banks, shops etc. If the power goes off, even our local Franklin's store closes. Why? Simply because most of their functions are electricity driven, and depend on the electronic devices available. Why is this pollution happening? There are perhaps two main reasons. Firstly, the recent developments with computers, have made their application almost universal in our society. We are finding different applications every day. Secondly, they do the job faster, more economically, more effectively than people can. Today I visited a Kmart store and bought a number of different items from all over the store. The items were scanned at the checkout, item recorded, price displayed, a printout given, and I have no doubt that at the same time the data base of remaining goods in the store updated, and buying lists appended, let alone the fact that I paid by credit card, which was processed, recorded, receipted, and the transaction probably stored on a database somewhere to assist with market research. I think you would agree that this is an impressive list for one young, lowly, poorly paid checkout operator to do on her own.

Given that electronic devices are so widespread, we may well ask what their effects on people are. Some disturbing recent evidence is emerging that they are not benign. They affect our lives in almost every area, eg. work, entertainment, eating, sleeping etc. I have been concerned at what I have learned recently. Because we use so much electricity, we must distribute it through high tension wires and stepdown transformers. It now appears that people who

live close to the strong magnetic fields generated by this technology are at risk healthwise. Apparently, authorities were made aware of this during the mid seventies after Wertheimer's massive research through the University of Colorado in the USA. What she discovered was quite startling, namely that there appeared to be a clear link between where you lived in proximity to high voltage distibution cables, and stepdown transformers, and the development of childhood leukaemia as well as other cancers. What is now emerging, is that it is not the short term exposure to strong electromagnetic fields which is so dangerous, but the long term exposure at above previously thought safe levels, which may depress our immune systems, and allow the development of diseases. It seems that children are more at risk in these circumstances.

The problems however, are not confined to high voltage lines, and strong electromagnetic fields. It now seems clear, that we must be on our guard in the home or at work. We are surrounded by electromagnetic pollution, unseen, unheard, and most of which we are completely unaware. Think of the developments in radio, TV, mobile phones. There are waves flying in every direction. Electomagnetic fields are literally everywhere, particularly in the work place. Significant biological risks go hand in hand with these developments. These risks are invisible, insidious, and almost impossible to measure without specialised equipment. Humans have no sensors or protective mechanisms for this type of pollution. Electro magnetic radiation is emitted by power cables, electric lighting, switches, office equipment, computers, power tools, cars, hair dryers, shavers, mobile phones etc. I was amazed to learn that such appliances(not cars), will still emit low level radiation, even when switched off at the power point, unless the plug is removed. _

In addition to the EMR from the appliances mentioned, there are far more powerful high frequency fields that bombard us every day. They come from radio and TV towers, radar installations, electricity generating plants, relay towers, microwave units etc. Levels of exposure to all types of EMR have increasingly been linked to harmful effects.

Our human body has a number of electomagnetic functions. There is electrical activity in the way our brains function, in muscle contraction, in neural transmission. In fact I am told that all cell function involves some form of electrical activity. It is not surprising that our bodies can be affected to a significant level by EMR. Strong , man-made electo magnetic forces interfere with our relatively weak energy fields.There are a number of responses common to constant exposure. In the work place it is becoming clear that a significant proportion of vague symptoms may be directly related to these causes.

In a recent edition of Australian Safety News, April 1993, Dr. Gary Davison argues that there are major health risks associated with EMR. He goes on to point out that the spread of computers has greatly increased the problems, because the computer has spread into most homes and workplaces. Not only are the devices present, but children from an early age are being exposed to long periods of radiation. Many people may spend up to 35 or 40 hours per week in front of their VDU. It is now clear that prolonged exposure to EMR may be the cause of serious health problems, such as brain tumours, male breast cancer, and some forms of leukaemia. Apparently simple devices such as electric toasters, generate relatively uncomplicated EMR, but monitors divide the 50 hz power into many different frequencies to create an image on the screen. He goes on to point out that that it is relatively easy to shield people from electric fields, but that electro magnetic fields will penetrate virtually everything, including lead and concrete.

There are other worrying devices about the home. The electric blanket seems harmless, and it is, if it is switched off before we get into bed. If we sleep with it switched on, we expose ourselves to a long lasting high level of radiation, because it is so close to our body. In the US some homes are now being heated by enclosing the rooms with electric heaters, built into the actual walls of the rooms. Electric razors and electric hair dryers may well prove to be a problem with long term use, because of the closeness to the skin. It is also worth remembering that waterbeds are often electrically heated, and are relatively close to the body. Microwave ovens are another area of concern.

It is my intention to simply alert members to the range of new ideas available about EMR. Perhaps more than most people, computer buffs are exposed more to these influences unless they take some precautions to protect themselves. Newer equipment with lower emission levels is being built. There are devices available to both monitor and control EMR levels. It would seem sensible to not spend excessive time in close proximity to EMR, whether it be on the computer, or working with any electrical eqipment. It would seem sensible to reduce children's time in front of computer screens. TVs do not seem to be as worrying, EMR wise, because we sit a reasonable distance from them.

I would be interested to hear what members feel on this topic. I have been aware for some time that there is growing concern, but it is only recently that I received up to date confirmation of my suspicions. I still enjoy using my TI and IBM machines. I think it will take much more than this to stop me, however I will be looking at ways to minimise the risks. Fortunately, I don't use electric curling irons, or an electric hair dryer, or an electric blanket, but I do use my computer a lot. I felt that this information should be common knowledge, as the media are very slow to say what is really happening. I suspect that governments, and any institution which sells or distributes electrical power or products, would have a vested interest in keeping this information out of the public arena as long as possible. Enjoy your computer.
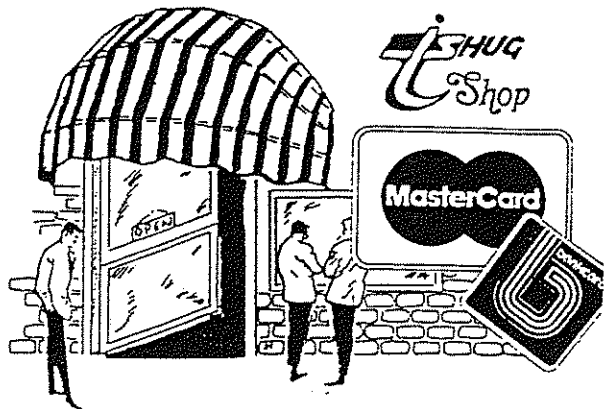
See you at the next meeting

Dick Warburton

`[END OF ARTICLE]`
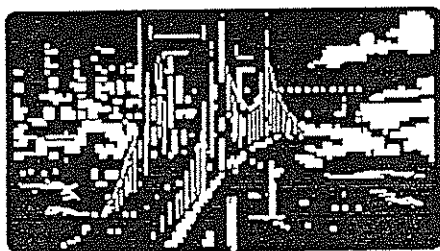
TIsHUG SHOP

with Percy Harrison.

After this issue of our TND we go onto a new system of postage known as PRINT POST which Australia Post claims could be cheaper and more convenient than the system that they have just phased out. After studying their booklet on PRINT POST I find that postage of our magazine will be considerably more costly, especially to those members in interstate country areas and the handling and sorting more complex. Although they claim that there will be more mailing centres for accepting the bundles of mail I now find that I will have to travel more than twice the distance to post our magazine as the Post Office that currently accepts it have been deleted from the list. Whilst we do not want to increase our membership fees it may be necessary next year to increase them slightly just to cover the extra cost of mailing, this will be decided after we establish just how much our overall postage bill will be affected by the new system. Overseas postage rates will not be affected by the introduction of Print Post.

Last month I mentioned the lack of sales of our IBM compatible programs. Nothing has changed so this month I thought I would devote the Shop space to writing up a brief description of the programs on disks IBM 1 to IBM 19 in the hope that it will entice you to start buying them. As I spend most of my computer time on the TI I have not run any of these programs so must apologise if the descriptions are not complete and accept no responsibility for their accuracy. I figured something would be better than nothing so here goes:

IBM COMPATIBLE SHAREWARE DISKS.

IBM 1 AS-EASY-AS Vers. 5.50. A very good and easy to use Spread Sheet.

PIVOT Vers. 1.01. Enables you to print your AS-EASY-AS worksheets in either Portrait or Landscape orientation and in the font of your choice.

IBM 2 FLASH Vers. 3.1. A racing information system which allows the enthusiastic punter to keep track of racing horse performance etc.

IBM 3 POWER MENU Vers. 5. This is a DOS operating environment for your IBM PC or compatible which provides easy access to any program on your

Harddisk. Very easy to set-up and use.

IBM 4 PC FILES. Professional File Data Base. A good, easy to use Data Base Program.

IBM 5   **VDE** Vers. 1.51. This is a small, fast, powerful text editor program as well as an efficient Word Processor taking only 45K of disk space and running in as little as 90 to 140K of RAM.

IBM 6   **CALCULATOR 1:** This disk contains about 10 different types of calculator programs. Could be of interest to the mathematical minded freaks.

IBM 7   **VIRUS.** F-PROT 2. An anti virus program which will intercept known viruses and prevent the execution of any program infected with any of the viruses it recognises. The program identifies the virus and enables you to remove it with the CLEAN-UP Program which is also on the disk.

IBM 8   **UTILITIES 1:** This disk contains a number of disk copy utilities, a Disk Performance program that will measure the performance of your hard disk, an ALIGN Vers. 1.6 program that allows you to move a diskette drive head to absolute track locations and operate the drive while checks and adjustments are made, and a ANADISK Vers. 2.01 program which is a utility for examining, editing and analysing diskettes.

    DISK COPY FAST Vers. 4.0F is an excellent copying program.

IBM 9   **CAD PROGRAM:**

    DRAFT CHOICE Vers. 2.0a. and **TURBODRAW.** These are two computer-aided drafting (CAD) programs, Turbodraw being one of the easiest CAD type drawing programs to use.

IBM 10   **PENPAL** Vers. 1.04. This is one of the easiest to use Mail List Management, Black Book and Letter Writer systems available.

    TECWRITE. RGB TECHWRITER Vers. 2.23. This is a personal computer word processor specifically designed to make technical typing involving complex symbolic expressions fast, easy and accurate.

IBM 11   **SELECTION 1:**

    FREEWORD Vers. 1.0. This is a User Supported Word Processor plus (if you are registered) a

    SSP's SPELL. A Spelling Checker. It is menu driven and has an online help service available from the main menu.

    HOME. Includes a Home Inventory Program for listing your possessions on your computer, a Data Encryption and Decryption Program, a Weather Records and Statistics Program Vers. 1.1 and a Timecalc Program.

    TCHTYPE. A Touch Typing Program including an instruction manual (on Disk) on how to use the program.

IBM 12   **UTILITIES 2:**

    DVR LIST. A list of disk drives and their specifications.

    DSKRW. DISK-RW Vers. 2.36. A very fast, single pass disk copier. Also works with non standard floppy controllers and non standard disks.

    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 subsystem.

    EDDY. Vers.5.52. EDDY (for Edit DirectorY) is a full screen directory editor and general purpose disk utility. Anything you would like to do with (to) a file, directory or entire disk can probably be done with EDDy, and done easier than with other utilities.

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

    EMC110. Expanded Memory Disk Cache Vers. 1.10. This program is 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. It should work with any system which has a LIM Spec expanded memory board and software, a disk system which is IBM-XT/AT compatible at the ROM-BIOS level and NO OTHER STORAGE DEVICES.

    EZCL. EZ-COPY LITE Vers 1.x. This is a "Custom Diskette Duplicator - Fast, Safe, and easy to use". Context sensitive help and on-line manual makes it easy!

    AT720-BIOS. Patch for 720K Diskettes in 1.2M Drives.

    EZCPLUS. EZ-Copy Plus is a collection of utilities that allow the user to format, copy, store, serialise etc. a large number of DOS (and some non-DOS) diskettes quickly. It will even overcome some copy protection schemes for legitimate backup of your expensive software.

    FASTCOPY Vers. 2.0. Fastcopy was written as an alternative to the DOS diskcopy and format commands. It has the capability to make multiple copies of the same source diskette, or make copies of different source diskettes or format diskettes and accomplish it much quicker than DOS.

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

    FDCTEST. This program will test any floppy controller 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.

    HDDRVdat. Hard Disk Drive Data. Provides physical data on two hundred and eight different Hard Disk Drives.

IBM 13   **MNGMONEY.** Managing money with your IBM PC or compatible. These programs can determine the after-tax cost of a loan, demonstrate the advantage of an Individual Retirement Account etc. etc..

    MONEY. Money Smith Vers. 2.0 for Windows. A Home/Small Business Accounting System Program, Documentation and Examples. Requires Windows 3.0 or 3.1 running standard or enhanced mode, Hard Disk and Mouse.

    WIZARD. This program is designed for a Hard Disk and 1.2MB floppy disk users who would rather start their programs from a single menu and keystroke rather than have to recall and enter the DOS commands necessary to run the programs.

IBM 14 EDUCATION (Programs for young children):

BRENDON. Brendon's Lunchbox. This is a series
of Educational programs for 3 to 7 year olds.
It contains 6 Educational games.

GOOGOL. A series of games for young children.
HANGMAN. Four different versions of the
Hangman game are presented in this program.

READEASY. Yet another good program for very
young children.

TEACHTOT. A good program for teaching preschool
children numbers, letters and shapes.

IBM 15 C_TUTOR: This is a comprehensive course for
the C Programming Language which is applicable
to most compilers with some slight differences.
Recommended for the experienced programmer who
knows about computer programming concepts and
has used some other high level language.

PC-ART Vers. 1.0. This is a graphics drawing
program that allows you to create colour
pictures and designs using the standard colour
graphics adaptor on the IBM PC. Does not
require joysticks or a mouse.

XANADU. Consists of 3 programs:

HDIR.COM. The HOTDIR, colourful sorted
directory program Vers. 2.0. Displays different
colours based on file extensions with many
other options.

PCSTAT3.COM. PC Status Utility Vers. 3.0.
Displays Disk/RAM statistics and other
information in a well organised format and is
much faster than CHKDSK.

SFIND.COM. Super File Find Vers. 1.02X. Finds
files fast anywhere on your disk (even inside
ARC files).

There are also several other small, useful
utilities on this disk.

IBM 16 4DOS. This is a complete replacement for the
DOS command processor, COMMAND>COM. It is a
significantly better user interface for MS-DOS,
and provides the user interface and
capabilities that MS-DOS should have had. This
disk also contains 3 third party utilities
written for use with the 4DOS command
processor and principally provide additional
support for the 4DOS file description
capability. On disk documentation.

IBM 17 COMIC1. The Adventures of Captain Comic Rev.4.
Your mission is to recover three treasures from
the planet Omsoc. The task is not easy and you
must avoid or destroy a horde of deadly
creatures.
COMIC3. As above but Rev.3. Revised player
control. Jumping in cramped areas is now more
consistent with the "feel" of jumping in open
areas. Also there are major bug fixes. This
version contains no known bugs.

IBM 18 COMIC2. As above but Rev.2. The following
improvements have been added to the original
version:
Added definable keyboard option.
Keyboard definitions can be saved.
High score file (COMICHGH) can be deleted to
"clear" high score.

BUBBLES. I have no idea what this program is
about. If anyone has tried it I would
appreciate a write-up for our magazine.

COMMUNIC. Again I would appreciate a write-up
from anyone who has used this program.

IBM 19 UTILITIES 3:

FORMAT2. This is a series of batch files that
allows anyone with two disk drives, no matter
what format, to format disks in both drives
without hassles.

3DBENCH. 3D Benchmark VGA Vers. 1.0. The 3D
benchmark is arrived at by timing one cycle of
a continuous 3 dimensional demonstration and
then calculating the average number of screen
updates the computer system has achieved in one
second. The higher the benchmark, the greater
the performance.

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 3.5 or 5.25 drive or a
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.

AFTMT100. FMT Vers. 1.0. A high-capacity
floppy formatter.

ALIGN Vers.1.6. The align 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.

APC. The PC Magazine Utilities Disk Vol 1.

ASC Vers 4.3. ASC2COM takes standard ASCII
format files and turns them into executable
files that are self listing.
BURNIN Vers. 4.3. Burnin is designed to do
just one thing: give your PC and all its
systems a tough workout by running it
continuously for 24 to 72 hours. If there is a
latent problem, it's sure to show up while
burnin runs. If not, then your PC gets a clean
bill of health. A must before your warranty
expires.

DISKUTIL:

NC. New Directory Vers. 4.0. Displays a
directory in three columns. File names,
extensions, sizes (or the <DIR> designator),
and the file attributes will be shown.

DOSUTILS. About half a dozen useful utilities
are contained in this directory such as:
BROWSE, DFACE (DOS File Accelerator), FREE
(Free Memory Query Program) and MC (Marks and
does not use bad clusters while formatting).

DSG. Disk Space Gauge Vers. 1.1 is a program
that displays a bar graph of the percentage of
disk space currently filled on your computer.

FILEUTIL:

KEEPER. Keeper is a TSR which moves all files
about to be deleted to a special subdirectory,
on the same drive, called \TRASH.

MANAGER. a companion utility to Keeper, which
should help to keep the TRASH subdirectory
under control.

WHEREIS. Searches for specified file(s)
through all DOS 2.0 directories listing
matching files with their appropriate
directories and subdirectories.

XDEL. Successively presents each file name in
your current directory for single-keystroke
file deletion or retention.

HDUTILS:

DISCACHE Vers. 0.01. Hard-disk System Speed-up
Utility. Supports conventional, extended and
expanded memory.

PACDISK Vers. 1.3. This software package
contains six utility programs for IBM PC-XT-AT,
128KB, DOS 2.0 to 3.2 Non-network Drives up to
32MB.

SWEEP. This program causes a command to be
successively executed in every subdirectory on
a hard disk.

VTREE. Visual Tree provides a visual
representation of the Tree-structured
subdirectories on a hard or floppy disk.

QUAID. I haven't a clue what this program is
about. Can anyone help with a brief
description?

STEPRATE. This program enables you to display
the current steprate of your floppy drive(s)
and change them if required.

My apologies also to the dedicated TI Users for
allocating all of the space this month to those "other"
computer Users but I think that you will agree that you
have had the lions share of my articles since I have
been running the shop and you will continue to do so for
some time to come.

                    Bye for now.

            ┌─────────────────────┐
            │ END OF ARTICLE ▓▓▓▓▓▓─
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│   │
│   THE   NEW   LOOK   │
│   GAMES   INFORMATION   │
│   Series III, No 5   │
+ ─ +

                 By Robert Brown

    Welcome to yet another Games Information article.
This is the fifth article in the current series (series
3) and I hope you are enjoying them so far.

    This month I give the solution to Starcross -
another Infocom adventure.

                    STARCROSS
                    ═─═─═─═─═

    Ah, outer space! No dank and dusty dungeons
here....but you can be sure that the puzzles are no
easier than they were in the Great Underground Empire!
So, settle in and get ready for lift-off.

    There you are, floating around space in your ship,
alarm bells ringing in your ears. Obviously,
something's about to happen. Get the tape library, then
get up and go Starboard into the Bridge. Push the red
button, which will shut off the alarm bell, and read the
screen.   This will tell you which object on your map is
the one to head for.

Now, there's no way I can tell you the exact
coordinates, as the destination changes from game to
game. However, it isn't hard to figure out what they
are.   Once you've done that, sit down in the control
couch and fasten the belt. Now you have to enter the
course into thecomputer, which is done as follows:
Computer, range is x, theta is y, phi is z.   The
computer will ask you to confirm the new course, which
you do by saying: Computer, confirm new program.   After
that, you're off!

    And now it's time for the hallmark of all Infocom
games: Waiting! You'll sit in the couch, and wait until
you arrive at the alien ship and you are captured by it
<however, you can enjoy the verbose descriptions while
you wait>. Once your ship is down on the dock, unfasten
Get the suit, put it on, then get the line.   Head
Portwards fegot*with airlocks begin now. Open the inner
door, go out, close the inner door, open the outer door,
and go out. Get used to doing that, because you'll be
doing it again, and again! So, now you're on the Red
Dock, and there's a strange-looking sculpture here.
Closer examination, and a little thought, shows that
it's a representation of the solar system. Aha! Could
it be...? You press the fourth bump, and strange things
happen.   Press   the small bump, and a black rod
appears...get the rod, and the outer airlock door opens!

    Okay, go inside <close outer, open inner, etc.>,
and you nt to save and just wander around, doing some
mapping. here will t in the game where I won't be able
to give you

    Now that you've checked out the territory a bit,
restore to your original entry point. You're ready for
the great rod hunt....because the object of the game is
to activtate and control the artifact, which is done via
different colored rods.   Right now, you want the red
one, so, go North, then West into the Room on Ring Two.
From there, North into the Zoo, and East into the
rat-ant cage.

    The red rod is part of the nest, and you just can't
reach over and get it.   This is one of the very few
times in an Infocom where violence is necessary: Throw
the tape library at the nest, which will be smashed.
While the rat-ants look at you in terror, grab the red
rod and the tape library.

    Now it's time for the yellow rod, so head along
West, South, West, which will bring you to the Blue
Hall.   Go South once and you're at the Blue Airlock.
Open the door, go down, close inner door, etc. When you
reach the Blue Dock, go Aft until you come to the
Spider-like alien.   It's quite intelligent and even
friendly.   Give it the tape library, and in return you
will get the yellow rod. Take that, and make your way
back to the Blue Hall.

    You have two rods, and you will be using them now.
From the Blue Hall, go up, and you're in the Grasslands.
Go south to the Thin Forest, open the hatch there, and
go down into the Repair Room. Put the yellow rod in the
yellow slot.   That turns on the lights in the Yellow
Hallway. Put the red rod in the SECOND red slot.   Make
sure it's the second; this will provide a breathable
atmosphere for you.

    Now, get the metal square, and go up, then
Novtl,$tl ** From there, West to the Yellow Hall and
Yellow Airlock. You know the drill by now, but there's
an extra feature this time: You will have to try to open
the outer door twice <it's balky>. the Yellow Airlock,
pick up the

    Once on the Yellow Dock, tie the line to the suit
and then to the hook. Head Portwards, get the pink rod,
put it in the basket, then go back Starboard to the
dock, untie yourself, and return to the Yellow Hall.

    Now, it's time for the blue rod. Go South twice,
then East once.   You are in a laboratory with a

mysterious silver globe floating in mid-air. Inside the globe, although you can't see it now, is a blue rod. It's easy to get, however. Take the two disks off the wall. Put one on the floor, and one under the globe. It doesn't matter which way you do it, the result will be the same. Put the basket on the globe, then turn the dial to 4. Ta-da! The basket suddenly appears on the disk on the floor, with the blue rod! Turn the dial to 1, then get both disks, the basket, and the blue rod. Put the rod in the basket. In fact, put all rods in the basket when you get them.

Okay, there's still plenty of rods to collect, so let's keep moving! Head West, then North four times to the end of the hallway, then West to the Room on Ring One, and South from there into the Computer Room. Open the panel on the computer, then insert the metal square into the slot. Turn on the computer, and you will get a gold rod. Don't worry about all the displays; they aren't important to you.

Now comes more waiting. What you're waiting for this time is the mechanical "mouse" that collects trash. So, move around until it makes an appearance. As soon as it does, drop one of the disks <either one>. The mouse will end til it disappears into a secret door in one of the e the mouse s, so you *must* follow it. Wait there until it reappears and leaves, wait a little longer to make sure it won't come back, then drop the other disk on the floor and step on it. Zap!! You're in the Garage! <Hurray for transporter disks!>. Pick up bin <yuck!> until you find

You are now in the Room on Ring Four. Now, this is why you had to do some mapping on your own: You must get the other disk you dropped, and there's no telling exactly in which room that was. So, you must explore on your own until you find the disk. Once you've done that, make your way to the Blue Hall where the airlock is. From there, go North twice, then West into the Observatory. Drop off one of the disks, then hike along East, South, East, East, South, East into the Weasel Village, and then East once more to the Village Center. Wait around a short while, and the Weasel chief will appear.

He will indicate that he wants your space suit. That's no problem, since the air will remain breathable, and you don't need the suit anymore. So, give it to him. Then, when he wants to give you something in return, point to the brown rod he wears around his neck. He will give it to you, and start to leave. Follow him! <Think of all this following around as good practice for "Deadline."> Continue to follow him, until you arrive at the Center of the Warren. Then climb down the ladder to the Green Airlock <yep, another one!>, and do the usual job with bilical, then to the Cargo Hold. Pick up the visor room of the ip. Move the$woelet * step on ttempt to leave the way you came, the Weasels

So, now you've materialized in the Observatory, and it's time to pick up another rod: Look at projector through visor. Aha! A clear rod. Sneaky, huh? Get the rod, drop the visor, then move along East, then South three times to the Melted Spot, then West into the Weapons Deck. Get the genuine Ray-gun, and look inside it.

Sonuvagun! A silver rod! Get that, then East and North, and up to the Grasslands, 'cause it's time to get this show on the road. Now, trek on South twice to the Dense Forest, then East to the base of the tree. Climb the tree, all the way up to the top, then jump to the Drive Bubble.

Insert the silver rod into the slot, then enter the bubble. There's a white rod here; get that and put it into the white slot. Under no circumstances should you insert the black rod into the black slot!! That will shut everything down! Okay, the drive mechanism has been activated; now you have to make the thing move. So, out, and up to the top of the Bubble, and....jump! Isn't floating in air fun? However, you still have some things

to do yet, so shoot the gun at the Drive Bubble three times, which will bring you to the Control Bubble. Go Down, then put the gold rod in the slot, and enter the Bubble. Inside, you will find the slots for the remaining rods. Put each rod in the slot of its own color.

Now, at last, you're ready to bring the artifact to life! Touch the large pink square, and the scene in the small one will change to show the inner solar system. Now touch the brown spot until a picture of Earth appears. Press the violet one until a ellipse shows <it *must* be an ellipse!>, then press the green spot, and flashing ast, the ve: Touch the blue spot, which activates to Earth! Of course, it isn't over yet! That final remark by the alien sounded a little ominous....I have a feeling you'll be heading out again into space sooner than you might think

Well that is the case if you play Infocom next Science Fiction adventure!! Any ideas?? I will tell you later.

If you need to get in touch with me, you can in the following ways...

1. By the BBS, Username: Games
                  Password: Star

Phone (02) 456-4606. Since BBS membership is $$$$$$$ ringing it up. If you do not have a modem, give me a call and I can get one for you eg Netcomm PocketModem, 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
        A u s t r a l i a

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) "This article was written because I am bored out of my brains! I know it is no excuse, but I have written 7 articles in the past two days, with over 20,000 words. I hear you say - I must have been bored!! Well who cares!!"

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

[END OF ARTICLE]

TIUP CELEBRATES ITS 12th
BIRTHDAY IN STYLE

Retyped by Loren West

A small but dedicated band of members of TIUP, the TI - 99 USERS OF PERTH (INC.) celebrated the 12th Birthday of the group on Saturday 20th March 1994 with the triditional sausage sizzle, rave - up, champagne "tasting" and ice-cream cake at the Hillcrest Primary School.

With a growing number of the group's members obliged, nay forced, to utilise IBM - compatible PCs in the workplace, it is amazing that so very few of the members actually own clones. So far none of the Committee - members will admit owning one (although I have a laptop on semi - permanent loan for use in employment - related tasks).

As with most user groups all around the world, our numbers have fallen off somewhat over the years, but reading the overseas newsletters convinces me that a 60% turn - up at general meetings is pritty good.

Unfortunately several of the group's stalwarts, mostly notably ex - Treasurer Steve Wilkinson and current "Secretary for life" Geoff Warner have on - going commitments of the familt tyoe that prevent them from attending 100% of the general meetings, but the remainder soldier on with encouragement from President Merve (the Master Home - Brewer) Trowbridge and Vice President Frank (I've been everywhere) Graham who perform the bulk of the administrative duties, put on demonstrations and rarely miss a meeting.

Word - processing and graphics are still the tasks that most members use their TI's for in Western Australia, and Geoff has access to some software to turn an OKI facsmile machine into a scanner for an IBM - compatible. He has placed an order for GIF - Mania and hopefully will soon be able to produce wondrous graphics of the type put out by TIsHUG graphics gurus on his TI - probably with heavy reference to the several articles on the subject by the members of that great group.

This note is to all TI - 99 users groups World Wide to assure them that TIUP survives and that the TI - 99/4A is alive and well in Perth, Western Australia.

Our mailing address is:

TIUP
THE TI-99 USERS OF PERTH (INCORPORATED)
c/o THE SECRETARY
3 MARU WAY   LESMURDIE WA 6076

☐ END OF ARTICLE ▨▨▨▨─ |

Techo Time

with Geoff Trott

RAMdisks from Pierre Garouche

I received the following letter from Pierre Garouche in France, who is one of the keenest members of TIsHUG that I know. I have been fortunate to travel around the world a bit and have met a number of TI99/4A enthusiasts but I have yet to meet Pierre. He likes programming in assembler and has sent me a number of useful programs in the past. On his most recent disk are some programs to investigate the operation of the RAMdisk and some of its ROS versions. The following article explains what they are and if you are interested in these programs they will be available from the shop. Pierre wrote to me (I have edited it a bit to try and make the meaning as clear as I am able to):

last year you gave in the TND some technical information about RAMdisks. I appreciated particularly the information concerning the requirements during the power on operation and the reverse power off operation to preserve the data in the memory chips. I would like to tell you my experiences with RAMdisks. All my RAMdisks are Horizon models. I built the first one at the end of 1986 or at the beginning of 1987, I do not remember the exact year. Its PCB is numbered 975 and came from Walbridge, with all other parts bought in France. With the PCB, I received a reference manual, ROS version 4 in two files: PARTA_04 and PARTB_04, its full commented source code and various utilities. In the manual was Ron Gries' very fine construction guide.

I bought two other RAMdisks (PCB number 1359, 1360 the same model as number 975) which were constructed in the last quarter of 1987. One has been in my PEB from this time, while the other was installed during 1990, as it was used by my son for 2 years. The fourth is a model 3000 with no RAMBO hardware and its PCB is numbered 3314. I bought it not as a kit but already built and fitted with three 128K byte memory chips at the beginning of 1992. Twelve months later I added 9 other memory chips to this board.

This last board is used as a fast hard disk. It is set at CRU >1700 and powerup on. The oldest RAMdisk is set at CRU >1000 powerup off, and I use it as my working drive. The 2 others are set at CRU >1200, >1600 with powerup off and are also in the PEB but for each one the >4000 address is set to zero. This is done to have a fast CRU scanning at reset or when using some programs such as disk-manager.

Originally, as a new user of RAMdisks, I endured the computer locking up at times. As my 8 bit RAMdisks have no disable switch, I used EASY BUG, the debugger program in MINIMEM to remove the lockup. By switching off/on the PEB, I clear the >4000 address at the right CRU. This was the solution I used to unlock the system. I have never had to take out a battery in order to reload the ROS. When I was tired of this procedure, I came to a strong conclusion concerning the order of turning the power on and off for my system:
Power on the PEB and next the console; power off the console and next the PEB; and if possible before the power off operation, have a return to a well definite state such as Horizon MENU or Funnelweb MENU.

From this time on, lockups are rare. With the 8 bit RAMdisks, I may say that I encounter no more lock ups, with the 16 bit RAMdisk, I have noticed that the VDP progressively is corrupted without any apparent bad consequences. I have observed that the "first TI screen", the one I get doing BACK (fctn[9]) from the Horizon MENU becomes corrupted with characters of low ASCII code after some weeks. When I notice that the "first TI screen" is not right, I reload the ROS using CFG. To have a fast and easy loading, I have saved my ROS in the RAMdisk itself. Some months after this, I found that the use of CFG is bit tiresome for this operation. Then I wrote a short program that transfers a copy of my ROS to >4000 to >5FFF address. This program does an internal transfer in the RAMdisk, using CRU addressing to page in the memory.

I wondered why my RAMdisks that are set to power-up off never need a ROS reloading? In my system, I use a MAXIMEM device with static 32k memory chips, each one is baked-up with a lithium cell and the MiniMem module also is backed-up with a lithium cell. All these devices keep data very well when power is switched off and on. Why does my RAMdisk set to power-up on suffer? With a lithium cell, the back-up voltage is 3 volts only and the gap to reach the normal 5 volts is a bit more.

Back-up of SRAM devices

On the subject of re-chargeable or not re-chargeable batteries for static memory chip back-up, I think that both models may gives good results. Re-chargeable batteries need:
a/ a limited trickle current 1/30 of the capacity for sintered electrode models and 1/100 of capacity for solid electrode models.
b/ a first full charge with a current of 1/10 of the capacity during 16 hours at least, 24 hours is better.

My HRDs are baked-up with 180 mAh capacity re chargeable batteries, sintered models. I do not agree with the modification done on the resistor at the

positive end of the HRD battery string. The new total
value is 66 ohms so the trickle current in the battery
exceeds 6 mA. Probably it was too difficult for
customers to make the first full charge. In my 3 older
HRDs the resistor values are set according Ron Gries'
specifications: 33 ohm from negative battery terminal to
PCB ground and 270 or 400 ohm resistor from positive
terminal to the reverse diode. My oldest HRD uses a 270
ohm resistor, the 2 others use a 400 ohm resistor and
the 3000 model a 33 ohm resistor. From 1987, I have
never had to replace a battery on the 3 first HRDs.
With the last one, I have not done a first full charge
so I wait and see if a failure occurs. It is possible I
am wrong in my thoughts!

File and FDR implantation

        In the TND September 1993 issue, you ask about
Forth and RAMdisks. I was not able to broach the
subject, I only know that when I write an assembler
utility for my son (he uses Forth on the TI99/4A or
Geneve), I must reserve some sectors before the code.
But in your paper you say:

"Because there is no time penalty ...."
"the ROS simply puts the FIB of each file in the next
available sector"
"and the data of the file follows immediatly after
that."
"That means .... that there will be no fragmented
files."
Without any critical intent, as says a friend of mine, a
RAMdisk may have a fractured file when it is not
recently cleared or initialized. I use HRD as working
disk when I write an assembler program (the most
frequent use of my TI99/4A) and I assemble the source
code many times during its debugging. As a result the
source code file is fragmented by the object code file
and the object code file is fragmented by the source
code file.

        Thanks to your paper I begin to deal with file
structure in the HRD and I discover that all is not as I
thought.

        I used the program MARKSECT, that I sent to you a
year ago after your paper about quad density, to
identify the sectors. I used EASYBUG from MINIMEM and
DEBUG to find the laws of CRU addressing according the
HRD model. Then I wrote a specific program to page the
memory for both HRD models: the old 8 bit devices and
the new 16 bit models.

        I found that HORIZON RAMdisks store files in
different ways according to two factors, namely the HRD
model (8 bit CRU addressing or 16 bit CRU addressing)
and the ROS version.

a/ HRD 16 bit device.
        The test was done with ROS v8.14 only. The HRD was
configured using the configuration program CFG v8.1.
The HRD was initialised to 5 drives: four at the
begining were set at 1440 sectors, the fifth and also
last drive was set at 376 sectors, filling up the HRD
device.

        I found, as expected, that the ROS is stored in 8K
of memory (>4000 to >5FFF) accessible with CRU address 1
(0000 0000 0000 0001), with other appropriate CRU
addresses, the >5800/>5FFF memory may be paged.

        First I loaded a single file that filled up the
first drive set up in the HRD. Then using a disk
manager, I found that the file started at sector number
3 and ended at sector number 1439. Sector 0 is devoted
to the FIB (Volume Information Block of the drive) and
sector 1 to the FDRP (File DiRectory Pointers), both in
same positions as they are in a floppy disk. In sector
2 is the FDR (File DiRectory) of the single file.

        Next, with the disk manager, I cleared the drive
and loaded two files using MARKSECT, (for the first file
QUIT was pressed to stop the program before the end of
the drive). For the first file, I found exactly the
same positions for its FDR and its begining sector. For
the second file, its FDR stands next the end of the
first file and its starting point is next after its FDR.
The end of this file is in sector 1439 of the first
drive. This is exactly the informations you gave us in
the TND.

        Using DEBUG, I see that the VIB of the second drive
stands next after the end of the first drive (the CRU
address must be increased by 2). It is the same for the
third drive next which starts at the end of the second
and so on with the the fifth drive straight after the
fourth.

b/ HRD 8 bit device
Such a device may be configured using different versions
of the CFG and ROS programs, which can be divided into
the versions under 8 and the versions from 8 and above.
(The first bunch are specific to the 8 bit devices, the
latter may be used for both models.)

b.1/ CFG and ROS v8.1
        The results are the same as I have found with 16
bit HRD devices.

b.2/ CFG and ROS v7.3
        The results are different: the files and FDR are
positioned exactly as they are on a floppy disk. When
the HRD is partitioned into two drives, it is exactly
the same for each drive. This was for me a discovery.

        In this case, the FDR was in sector 2 straight
after the FDRP in sector 1 and the VIB in sector 0. The
file data starts in sector number >22 as it does on
floppy disk. The file goes to the end of the device and
then the file is broken and jumps to the first sector
that is empty (next after the FDR). The file ends in
sector >21.

        With 3 files written successively to the same
device with ROS v7.3, I found that the 3 FDRs are in
sectors number 2, 3 and 4. The last file is broken at
the end of the device and it jumps from sector >2DF to
sector 5 (the first sector that is empty after the 3
FDRs.

        I have not experimented with more than 32 files on
the device. I would give odds of two to one that the
33rd FDR is placed after the end of file 32 and the data
of file 33 starts directly after the FDR.

        Perhaps this provides one solution to running Forth
from an 8 bit RAMdisk?

        On the next page you will find the directory
reports I have saved using DSKU.

        I have made a program to display the different
parts of an HRD memory. It may be used with a 16 bit
HRD or an 8 bit HRD as well. This program use CRU
addressing so memory inspection is not by file. It is
ROS version dependant. You will find it on the floppy
disk.

        I hope you are not full tired of my bad english
language, it is for my the only way to tell you how I
appreciate your Techo Time papers.

        As a reply to Pierre, I would like to thank him for
his kind words and I am glad that he finds my articles
interesting. I also enjoy receiving his contributions
and hope that by publishing them, some others will also
be inspired to try things out. I am sorry that I did
not explain myself well enough when I said that there
would be no fractured files on a RAMdisk. I was trying
to say that if you copied the files from a floppy to a
"virgin" RAMdisk, none of them would be fractured. We
both agree on that and I agree with Pierre that you
certainly can and do get fractured files when developing

assembler programs and C programs in particular. What I did not realise was this behaviour depended on the version of the ROS that was used and that the earlier versions of the ROS behaved just like the floppy disk operating systems, although I have a feeling that I did know that years ago. It is an example of an upgrade doing something which should be invisible to the user but which may cause major problems to some users. The price of progress!

HRD 16 bit device

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

CFGv8.1 and ROSv8.14   only 1 file, named M, filling up the device.

Diskname RDH8B/R8.1 Total Sectors 734 Free Sectors 0   Date   Files 1

                              Sector
Filename   File Type Size FDR Start End Pro Comment

M   D/F 128   734 0002 0003 020F No   ROS 8.1 does not cut single file

CFGv8.1 and ROSv8.14 3 files, named M/N/O, filling up the device.

Diskname RDH8B/R8.1 Total Sectors 734 Free Sectors 0   Date   Files 3

                              Sector
Filename   File Type Size FDR Start End Pro Comment

M   D/F 128   253 0002 0003 00FE No   written first time
N   D/F 128   251 00FF 0100 01F9 No   written next after M file
O   D/F 128   230 01FA 01FB 020F No   fill up the remainder part

‡
HRD 8 bit device
==================

CFGv7.3 and ROSv7.3   only 1 file, named M, filling up the device.

Diskname RDH8B/R7.3 Total Sectors 734 Free Sectors 0   Date   Files 1

                              Sector
Filename   File Type Size FDR Start End Pro Comment

M_8B/R73   D/F 128   734 0002 0022 020F No   single file broken with ROS v7.3
                           0003 0021

CFGv7.3 and ROSv7.3   3 files, named M/N/O, filling up the device.

Diskname RDH8B/R7.3 Total Sectors 734 Free Sectors 0   Date   Files 3

                              Sector
Filename   File Type Size FDR Start End Pro Comment

M   D/F 128   244 0002 0022 0114 No   written first time
N   D/F 128   251 0003 0115 020E No   written next after M file
O   D/F 128   239 0004 020F 020F No   fill up the remainder part
                           0005 0021

More on battery backups

from Jim Banfield

Another correspondent of mine, whom I have not yet met, is Jim Banfield of Armidale. He is a hardware person and wrote a series of articles on assembler for the TND. He was also stimulated by my article on problems with backing up memory chips with batteries. He has his own version of debug in a module like MiniMemory and has had problems with that retaining memory in the module port and the PEBox. I have had similar problems with a modified MiniMemory module which has had its RAM memory expanded to 32K (switchable in 8K banks) and an Editor Assembler GROM added. I will leave my solution until after presenting Jim's information. He writes: "Having noted that the MiniMemory module is quite stable, I determined to find out how TI did it, so I removed the back and traced the circuit with my faithful Fluke. It is very difficult to be sure that all connections are found without stripping the board so that the attached circuits are provisional. From the complexity of the circuitry and the expense of manufacture I conclude that Texas also had trouble with volatility. The unconventional interface of the 74LS32 is noteworthy; the rationale of using the pnp pass transistor rather than a diode eludes me. I have not yet had time to try out the circuit but I thought you might like to see it, assuming that you have not done so already. I would certainly appreciate your comments."

I agree with Jim that the circuit is complex and does work well. I have redrawn it here and will attempt to explain its operation. When the power is on there must be no current going into the battery (or out of it) and the 5 volts must go to the Vcc pin of the memories (pin 24 for the 6116). The CS(L) line (pin 18 for the 6116) of each memory is held high to disable the chip and for the power down mode. If the power off mode is considered first, D1 connects the battery to the Vcc pins of the memory and D2 provides positive voltage to the CS(L) pins via the 1k and 3k3 ohm resistors. The diodes in series with the outputs of the OR gates (D3, D4) stop current flowing into these outputs when power is off. Both transistors are turned off so that no current flows into the base of the pnp transistor nor into the collector of the npn transistor. This puts the memory into its power down mode (more than 2.2 volts on both pins 24 and 18) which means it draws very little current but retains the memory's contents.

When power comes on, D2 prevents base current flowing out of the pnp transistor which stays off until the npn transistor turns on. The voltage divider at the base of the npn transistor means that when the power reaches 3 volts the transistor turns on (5 times 0.6 volts, the turn on Vbe voltage) and provides a path for the base current of the pnp transistor through the 1k resistor into the collector of the npn transistor. This also takes the ends of the 3k3 resistors to 0.2 volts which means that the OR gates must now supply the current through the diodes to keep the CS(L) signals high when the memory is not in use. In this mode, the power is applied to the Vcc pins of the memory through the pnp transistor, whose voltage drop will be 0.2 volts or less. The two diodes from the battery will both be reversed biased by this time. D2 will be reversed biased as the emitter of the pnp transistor will be at 5 volts which means its base will be at 4.4 volts. In other words, all the current through the 1k resistor comes from the base of the pnp transistor and none through the diode.

So the npn transistor and the resistor divider at its base controls the turn on and off of the pnp transistor and hence the transfer from power to battery. Using the pnp transistor gives less voltage drop and allows the change over between battery and power to be controlled. The diodes at the outputs of the OR gates are to prevent current going into the gates on battery power which means there must be a resistor to ground when the circuit is being used normally to allow these

signals to go low. The small value capacitors at these points are to get rid of the switching transients at the power change over time. The OR gates are used to provide CS(L) signals for the 4K EPROM and the two 2K RAM chips in the MiniMemory module. I have drawn these gates with their alternate symbol as they are all performing AND functions.

When I gutted and rebuilt my MiniMemory module, I did not leave in this complicated circuit as there was not room for it. Also there was no need for the CS(L) logic as the ROMG(L) signal came straight to the CS(L) signal of the RAM chip (6264 for 8K or 62256 for 32K). I then had trouble with the battery discharging when the module was left in the console and power was off. I solved this by inserting an npn transistor in series with the CS(L) line as shown in the circuit below. This allowed the CS(L) pin on the memory to be kept high when on battery supply without any current going into the external circuit as the transistor is only on when the power is on.

I hope this provides some interesting food for thought for all those whose batteries seem to go flat too quickly.

GAINING PEACE OF MIND

Retyped by Colin Mc Carthy

This article appeared in MICROpendium in April 1993 and originally appeared in the News letter 9T9, the newsletter of the TI user Group of Toronto, Canada.

Readers who undertake this project do so at their own risk.

Ever notice how your Peripheral Expansion Box gets really hot?

Ever wished for a Hard Drive mounted in your PEB but know your PEB power supply can't handle it?

Tired of your Geneve and HFDC cards slowly turning brown around the voltage regulators?

The original author, Al Beard, was concerned about this so he asked his friend Tony Lewis for advice and was told that the PEB wasn't designed for the newer drives and after market cards which are now available.

The author had lost one power supply and had to replace it with a new one from TI. He had decided to replace it with a newer Switch Mode type.

TI had designed the power supply around the technology of that time, i.e., a "Linear" power supply. This means that the PEB contained a fairly large power transformer, with simple voltage regulator circuits to provide the power to the buss inside the computer.

The original power supply, by it's very nature, created a lot of heat within the PEB but the modern switch mode power supply avoids the transformer and associated heat problems by switching the power on and off very quickly (this has caused some interesting problems in offices that contain large quantities of PC-based equipment).

Switch-mode power supplies are relatively cheap due to their wide applicability to PC's.

The TI PEB manual says that the voltages on the PEB buss out of the power supply should be:

Brown .... +16v
Yellow .... -16v
Green .... + 8v
black .... Ground

In the TI design, the voltages are further reduced by other regulators on the PEB cards to a voltage that the cards can cope with.

For instance:-

+16v is reduced to +12v
-16v is reduced to -12v
+ 8v is reduced to + 5v

This wouldn't be too bad but for the fact that the measured voltages were even higher than stated. The +16v was measured at +20v and this means that the cards run hotter than they should.

Note: for the uninitiated, the higher the voltage across a load, (the PEB card) the more power consumed, and the excess power appears as heat.

Further, the power supply is incapable of providing adequate power for two full height drives or even one 5.25-inch hard drive. The author wanted to fit a 5.25 inch hard drive along side a half-height floppy drive for a completely self contained machine.

A NEW SUPPLY

The author purchased a used IBM-AT power supply and proceded to install it in the PEB.

The power supply was a 200 watt unit and came with several features including a low voltage (and quieter) fan and several power connectors for drives etc.

the project was started on a Sunday evening and this is how the author carried out the modification.

a. The power transformer was removed (4 nuts).
b. The terminal strip was removed (2 nuts).
c. The power connector (2 screws removed).
d. The power supply board(remove 2 screws and unsolder wires to PEB buss).
e. Fan (remove 4 nuts).

The wiring to the front power switch and to the fuse was retained (later model PEB's no longer have the fuse on the rear of the PEB).

The wires to the front power switch were carefully cut and soldered the 120v AC power connections to the power plug that went to the new power supply.

Note:- PEB's sold in Australia will have a three wire,240v AC power supply having a Blue active (live) wire, a Brown neutral wire (return) and a green or green with yellow, earth wire so take great care in carrying out this operation. - Ed.

The low voltage fan was removed from the new power supply and mounted on the back of the PEB using the four nuts which had held the original fan.

The decision on the best method of installing the the new power supply board took some time, but it was decided to use the plastic vertical mounting module from the old power supply. All that was needed was the drilling of a couple of holes and the new supply mounted vertically like the original one.

The new power supply came with several disk drive connectors (four to be exact) so one set of wires was simply cut off.

It also came with connectors which were intended for connection to an IBM-PC compatible motherboard. These were cut off and all wires except those for +12v, -12v, +5v and ground were also cut off.

The remaining wires were soldered to the buss as follows:-

+12v went to brown.
-12v went to yellow.
+ 5v went to green.
and Ground went to black

WARNING:- If you decide to try this yourself, make sure that the cables going to the drive connectors are long enough to run behind the cards in the PEB. The author's were a little short but still usable.

The hard drive and the floppy drive were mounted side by side in the PEB and the cables were run out of the box before it was put back together.

NOTE:- Once this modification is carried out, every card plugged into the PEB will need to be modified also, and cards modified in the manner described below will not be able to be plugged into a standard PEB.-

CARD MODIFICATIONS.

Here is the nasty part of the power supply changeout. Every card that you plug into the PEB will require a modification and, as stated above, the cards that have been modified cannot be plugged into a standard PEB without blowing the card. Time for a big "CAUTION" sticker on the modified cards.

The modification is quite simple and is required because cards no longer need to do their own power regulation. The voltage on the buss (+12v, -12v and +5v) will be the correct voltage for the cards. The modification involves by-passing the voltage regulators onthe boards with a wire link.

One way to do this would be to remove the regulators and install the link between the vacant the voltage input and output holes on the board.

Another simpler way was chosen by the author because he wasn't quite sure if the modification would work. His method was to bridge the two outside leads of the regulators where they passed through the boards on the solder side, i.e., the side of the board opposite to the one where all the components are. This had the advantage that the modification could be "undone" if the boards were ever required to be placed in a standard PE box again.

The voltage regulators are rectangular in shape with a metal heatsink tab on one side and three leads projecting from the opposite side. The centre one is the earth lead and should not be bridged. the two outside ones are the input and output leads and the author bridged these on each regulator on the board with a piece of wire.

RESULTS

The author modified the GENEVE card and was greatly relieved to find that it worked ok i.e., the GENEVE title screen appeared. The next card modified was the HFDC card and after the hard drive was plugged in, the system booted normally. After that, the TI disk controller card was modified (although the author reports some difficulty in getting the case apart). The floppy disk drive worked ok and last card, the MYARC RS232 card, was also modified and was ok.

The author was also going to modify a Ron Walters MEMEX 2 Meg memerory expansion card and a speech synthesizer card but, at the time of writing of the original article, had not done so because he wanted to check with the card's manufacturer first.

PEACE OF MIND

Was it worth the trouble? The total project time was quoted as three evenings totalling about six hours. The PEB ran cooler and the PEB cards no longer turned brown.

The author now has the peace of mind of having a totally integrated computer plus hard drive within the PEB.

The author considers the excercise was worth the trouble and was pleased to have a little rest from programming.

The author gave one final word of warning, "Don't try this unless you have a pretty good idea of computer hardware and power supplies."

<div align="center">

`| END OF ARTICLE |▨▨▻ |`

</div>

TIsHUG June software file.

By Larry Saunders

Diskname G077
Total Sectors 358 Free Sectors 21
Date JUNE1994 Files 10

The Best Of The UK games
A selection of games that are quiet good.

B/Catch: Catch the hearts around the screen. Keep a eye out for the monsters. The monsters can be punched by pressing the fire buttom. If the monsters are green the are fairly slow, but can change to RED at any time and become very fast, they also can jump up or down at a blink of an eye and reappear almost on top of you. I have not seem them jump more that two levels at a time.
B/Hatchery: Kill the monsters before they hatch. A clock at the top of the screen tells how much time you have before they hatch. The hammers can be used to get you out of trouble.
Floor2: A game on the lines of TI Runner.
NoteWorthy: Clear the screen of the music notes, without getting killed by the monsters or the overhanging plungers that move at random.

G077

B/CATCH	41*Prog	B/HATCHERY	50*i254
B/RESCUE	46*Prog	FLOOR/INST	11*Prog
FLOOR2	52*i254	FLOORAWAYJ	42*Prog
FLOORAWAYK	42*Prog	LOAD	7*Prog
MENU	6*Prog	NOTEWORTHY	40*Prog

Diskname P078
Total Sectors 358 Free Sectors 18
Date JUNE1994 Files 8

Page Pro Pictures.

P078

ORNAMENT07	76 I 13	ORNAMENT08	34 I 13
ORNAMENT09	27 I 13	ORNAMENT10	26 I 1
ORNAMENT11	38 I 13	ORNAMENT12	76 I 13
ORNAMENT13	22 I 13	ORNAMENT14	41 I 1

Diskname P079
Total Sectors 358 Free Sectors 0
Date JUNE1994 Files 6

Page Pro Pictures.

P079

ORNAMENT15	33 I 13	ORNAMENT16	55 I 13
PEACOCK	83 I 13	PHONE	57 I 13
RVSP	72 I 13	WINGEDBALL	58 I 13

Diskname P080
Total Sectors 358 Free Sectors 3
Date JUNE1994 Files 8 one is Archive.

Page Pro Pictures and Borders, the borders are in a archive file and must be unpacked before using.

Three files listed below is a catalog of the archive file (STAR/ARC).
NOTE: If you are using a single sided single density drive, you will need two blank disks to unpack it.

Total

STARB01	111	Int/Fix	13
STARB02	110	Int/Fix	13
STARB03	172	Int/Fix	13

Main catalog of disk   P080

ARC	33 Prog	LOAD	5 Prog
PHONE	57 I 13	ROOT	28 Prog
STAR/ARC	83 I128	SUN	73 I 13
THEATRE	42 I 13	VASE1	34 I 13

<div align="center">

`| END OF ARTICLE |▨▨▻`

</div>

OUTDENTING and INDENTING WORD PROCESSING TIPS

by Bob Relyea

I used to admire how some authors could make each _first_ word of a sentence in a document be placed exactly where it should be without a lot of untidy-looking overlapping. To my shame, I never thoroughly looked into it until recently when I was writing up the minutes of the recent AGM. Prior to that I just tidied up a document manually by using the fixed mode. So, I said to myself- "Right! I am going to get this document right by using formatting commands if I have to sit here all night." So, with an occasional look into the TI-WRITER manual, a couple of questions to a knowledgeable individual, and a lot of practice, I finally got it right!

If I may digress for a moment, I was grateful that my mini-system has FunnelWeb on eproms as it made it easy to go back and forth between Editor and couple of questions to a knowledgeable individual, and a lot of practice, I finally got it right!

If I may digress for a moment, I was grateful that my mini-system has FunnelWeb on eproms as it made it easy to go back and forth between Editor and at it. This is called 'preview' (or paper-saver) in the PC world, and if you have FunnelWeb on eproms it is just as fast to execute. This method eliminates the problem of sending a text to a printer only to discover that something did not come out the way you wanted it to and must be done again. While I am on the topic, if you do format something to disk and call it up for a look then you will notice that there is a linefeed (LF) symbol at the end of each line, even a blank line. So, if you want to print this formatted text right then and there off the editor then you must put a linefeed symbol at the end of your printer parameters to avoid double spacing. The reason is that the editor already has a linefeed build into it and with the linefeeds on the document you get two lots. One, therefore, must be suppressed and, as indicated above, this is done by typing in something like the following after invoking the PF (printfile command):

PIO.LF   or
RS232.BA=4800.LF

Before I get back to the original topic, a couple
more thoughts. If you have used either the @ or the &
in the text to overstrike (embold) or to underline then
you will notice on the formatted text that something

like the following will result:

          overstrike   underline
          overstrike   _____LF
          overstrike
          overstrikeLF

Any word that is overstruck will appear four (4)
times in the formatted, only the last of which will have
a linefeed. So, the printer will go over the same space
four times before being instructed after the fourth one
to linefeed. That is why is becomes darker- the same
word has been printed four times in the same place. For
the underline there appears only the word (with no
linefeed) and the underline itself is on the next line
with a linefeed. So, after printing the word, the
printer does not advance but goes right back over the
same place with an underline before it advances to the
next line. Of all the things in the Word Processor bag
of tricks, I use this feature the most. Finally, if you
format a text to disk, you can keep the same name if it
is sent off to a drive other than the one that the
original text is on. If not, then you must change the
name as it will not format onto itself.

Now, back to the original topic.   I am going to
illustrate what I mean by having the first word 'in the
right place' by using an example out of the index of a
Nuclear Physics text book.   I will place the usual
formatting commands at the beginning so you can see the
result.   Later I will show what must be done if you are
to get it to look like it does in the book.

Example 1:

Chapter 1   Early Observations of Radioactivity
             1.1 The discovery of radioactivity
             1.2 The ionising ability of radioactivity
             1.3 Other radioactive elements
             1.4 Exercise

Chapter 2   Types of radioactive emissions
             2.1 The main emissions
             2.2 The nature of radioactive emissions
             2.3 The relationship between penetrating and
                 ionising ability
             2.4 Exercise

See how nice and neat the text appears with
everything lined up perfectly? That is the way that it
appears in the book and what you would get printed if
you typed it in the editor and just printed it without
going through the formatter.   However, many times we
want it to pass through the formatter, and if we do so
with the above text with the formatting commands as
given above then what follows is what you get:

     Chapter 1 Early Observations of Radioactivity

     1.1 The discovery of radioactivity
     1.2 The ionising ability of radioactivity
     1.3 Other radioactive elements
     1.4 Exercise

     Chapter 2 Types of radioactive emissions
     2.1 The main emissions
     2.2 The nature of radioactive emissions
     2.3 The relationship between penetrating and
ionising ability
     2.4 Exercise

Pretty yukky isn't it? Well, the main point of this
article is to explain how to pass the above text through
the formatter and get the original text all lined up
nicely.   Outdenting and indenting is explained, in
brief, on pages 54, 103, and 143 of the TI Writer
manual, if you have one. The INDENT (.IN) command is
used with the LEFT MARGIN (.LM) command. In the manual
it states:

LEFT MARGIN = .LM n (.LM [+:-]n)- This command sets
the left margin. The "n" in the command is replaced
with the column number at which the left margin is to be
set. This number must be smaller than the number at
which the right margin is set. The left margin may be
reset with this command as many times as desired.

INDENT = .IN n (.IN [+:-]n)- This command indents
the first lines of paragraphs.   The Text Formatter
interprets the beginning of a paragraph as the first
character after a carriage return symbol or the first
character after a blank line or lines. When an absolute
value is used (i.e. without a + or -), text is indented
to that column number regardless of the left margin.
When relative values are used, the indent point is
calculated from the left margin value. -For example, if
the left margin is 10, .IN +5 sets the indent point at
10 + 5, or 15 and .IN-5 set the indent point at 10-5, or
5. The command .IN +0 can be used to nullify the Indent
command, but another Indent command must be inserted
where indenting is to resume. Each time the left margin
is reset, indentation must also be reset.

Normally then, the Indent command is used in
conjunction with the Left Margin command. So, to set up
proper commands to indent and outdent attention must be
given to both the Indent and Left Margin numbers.
Indent, of course means that the first line of the
paragraph is set to the right of the normal Left Margin,
and is normally achieved by using the + sign.   Outdent
means that the first line of the paragraph is set to the
left of the normal Left Margin and is normally achieved
by using the - sign. The emphasis of the following
discussion will be on Outdenting.

The 'trick' in understanding outdenting is to
realise that. in a paragraph. the Left Margin deals
mainly with the second line onwards, while the Indent
command deals exclusively with the first line.
Remember, a paragraph ends with a carriage return symbol
no matter how long or short the 'paragraph' is. So, in
the above text that we are dealing with, there would
normally be a carriage return symbol at the end of each
part of the outline, which virtually means at the end of
each line.

Let's look at the first three lines of the text we
are working with. To get this right you must do a bit
of counting.   You may also have to consider that, when
passed through the formatter, there are at least two (2)
spaces placed after each full stop and at least one
(space) after all other symbols or letters. So, if we
want the following text to end up correctly, we notice
that there are twelve (12) spaces from the 'C' of
chapter to the 'E' of Early. This means that there must
be 12 to accompany the Outdenting command. The Outdent
comand must be twelve (12) to the left of the Left
Margin. So, your document may be set as follows:

Chapter 1   Early Observations of Radioactivity
             1.1 The discovery of radioactivity
             1.2 The ionising ability of radioactivity

Notice I said 'may be' set out.   It only really
matters that the Indent command is -12 and that the Left
Margin is less than the right one and is at least 12 in
this case. So, I could have written in .LM20;IN-12 and
the result would have been basically the same. The only
difference is that in the second case the whole text
will be 8 units further to the right on the page than in
the first case.

The last thing to consider is what to do if a point in the outline is longer than one line. If care is not taken you will get an ugly-looking overlap.

Let's consider the second part of the outline. Notice that point 2.3 cannot be fitted onto one line. The following two examples show firstly what the result should be and secondly what will happen if you do not set the commands properly.

Chapter 2   Types of radioactive emissions
             2.1 The main emissions
             2.2 The nature of radioactive emissions
             2.3 The relationship between penetrating and
                 ionising ability
             2.4 Exercise

Chapter 2   Types of radioactive emissions
             2.1 The main emissions
             2.2 The nature of radioactive emissions
             2.3 The relationship between penetrating and
             ionising ability
             2.4 Exercise

Notice that second line in point 2.3 starts directly under number 2.3, which appears untidy to me. One way around it is to place the commands as follows:

Chapter 2   Types of radioactive emissions
             2.1 The main emissions
             2.2 The nature of radioactive emissions
             2.3 The relationship between penetrating and
                 ionising ability
             2.4 Exercise

A quick bit of counting will explain why. You will notice that all of the words following the numbers 2.1, etc are at Left Margin 16 and that the numbers are 4 units to the left of them. Need I say more? That is what outdenting is all about. You just set the Left Margin at 16 and outdent -4.

The next thing is to point out that because of the Adjust command that usually accompanies a formatted text, you ocassionally notice more than two spaces after a full stop and more than one space after other symbols/words. The following is an illustration of what I mean. Keep your eyes on the words after numbers 2.3.

Chapter 2   Types of radioactive emissions
             2.1 The main emissions
             2.2 The nature of radioactive emissions
             2.3 The relationship between penetrating and
                 ionising ability
             2.4 Exercise

Notice how the 'T' of The is one space further to the right than you probably wanted? To get around this you just place a carot( ) symbol between words that you do not want to be separated. The following is an illustration:

Chapter 2   Types of radioactive emissions
             2.1 The main emissions
             2.2 The nature of radioactive emissions
             2.3 The relationship between penetrating and
                 ionising ability
             2.4 Exercise

Now, the last thing that I wanted to mention is more of a general use for indenting. It is common to place the majority of the formatting commands at the beginning of a text, before a title even. What follows is a typical example:

    .FI;AD;LM0;RM55;PL330;IN+5

If you place the .IN here then the title (s) will be placed further to the right than you wanted and it is not really centered at all. The reason is that the Indent command places the first line of any paragraph 5 units (in this case) to the right as it counts from the Left Margin. Since every line of a title is the first line of a paragraph it results with a title too far to the right. To get around this, place the Indent after the title but before the main text and it will come out better. Cheers.

THE TI99/4A.

The following article was written by David Winton for inclusion on the INQUESTOR BBS in Newcastle. A small addition was made to the article by Ross Mudie.

The Texas Instruments TI99/4A Home Computer.
--- A Short History ....

The TI99/4A Home Computer is a 16 bit (16 lines on the data bus). This microprocessor was developed by Texas Instruments mainly for Industrial control applications and has been used extensively for this. Several Integrated circuits including the 9901 Programable Systems Interface, the 9918 and 9929 (PAL) VDP IC's as well as others in the 9900 Family System developed and produced by Texas Instruments became available and were included into a 16K microcomputer of the early 1980's. The Texas Instruments TI99/4 was first introduced to provide a computer for home use with TI BASIC in ROM with Colour, Graphics and Sound. Peripherals were released including a Thermal Printer, RS232C interface, Disk Controller and a 32K*8K Memory Expansion unit, all joined the expansion port in line, if most units were connected it was an impractical 1.5 meters long. The assumption at the time was that most users of the Home Computer would only require up to three peripherals at the one time. Software was sold in ROM cartridges called Modules also disks and cassettes. Texas Instruments discouraged externally written programs and also the development of peripherals for the computer. A closed architecture policy was maintained and a propriety language named GPL (Graphics Programming Language) in the ROMs, added to the difficulty of the programmers who wanted to fully use the capabilities of the computer without the slow interpreted Basic which lacked the Peeks and Pokes of other microcomputers. An Extended Basic with 40 new commands and improved subprogramming capability, with both local and global variables and Sprites was released in 1981 together with an improved keyboard the TI99/4A. An Editor Assembler and an alternate expansion system incorporating a metal box into which eight cards could be accomodated similar to the Apple II but external. This was a more compact arrangement for a fully expanded system, however a rather ugly black "fire hose" connector linked the PE Box with the computer. A Word Processor called TI Writer and a Module with 4K CPU RAM and a Line-By-Line Assembler called Mini Memory, appeared in 1982. Microsoft Multiplan, a P code USCD Development System and LOGO II plus several modules including Parsec added to the versatility of the TI99/4A.

Educational software and games cartridges with Speech capability and ATARI Games and INFOCOM Adventures, provided enough for users both at home and Small Business. User Groups were established World wide and there were further new developmental plans for the computer including Wafer Tapes and a smaller more compact expansion system called Hex Bus. Prices for the computer software and peripherals remained high, a fully expanded system cost nearly $3000 A. There was some bad publicity from a batch of US mains transformers which apparently caught fire and problems came when Texas Instruments attempted to capture more of the Home Computer market through Expensive Advertising campaigns (hiring Bill Cosby). The main competition on the US market in 1983 was from Commodore Computers, initially with the VIC20 then the C64. A Price cutting War began between Texas Instruments and Commodore Computers. At one stage Texas Instruments were selling the TI99/4A for less than the production cost $99 US. Finally late in 1983, Texas Instruments announced it's withdrawl from the Home Computer market. The withdrawl apparently cost 180 Million US dollars, which was written off to produce an overall gain through clever accounting.

Technical Information was released by Texas Instruments and the future development of peripherals and software left to the Users Groups and companies like Corcomp and Myarc. Commercial and fairware have been written for the TI99/4A. Notably Funnelwriter by Tony McGovern and his son Will from Newcastle, Australia. It first appeared as an improvement to the TI Writer then was further developed into a full operating system incorporating the Editor Assembler and several useful Disk Utilities, the latest version includes routines for the 9938 based 80 Column Card, another addition to the user developed peripherals. Others include various memory expansions, internal Modems and Ramdisks. The QUEST Ramdisk by Neil Quigg of Newcastle with the assistance of Tony and Will McGovern as well as Ron Klienschafer allows for up to 1Meg. The TI99/4A is still a popular alternative to other microcomputers due to it's reliability, the low comparative cost and the great user support.
----- DAVID WINTON 25/08/90 ----- (Ph 049 591882) .....
The developments on the TI99/4A by user group members have kept the machine alive. At the recent Newcastle Microcomputing Exhibition the imagination of hundreds of children were captured by a small model train layout which was controlled by a TI99/4A 32K console using Extended Basic and hand wired custom peripheral interface. Problems of shortage of peripherals has been overcome by user groups who have designed disk controllers, serial and parallel interfaces, EPROM programmers and any other special hardware that may be required.
Installation of a 32K Static RAM memory expansion in a TI99/4A console allows users of a seemingly simple console with cassette tape loading to be able to load

and run assembly language games programs under Extended Basic. The ZENO board provides facilities to permanently mount 32K memory, Extended Basic, Speech Synthesizer, Time of Day clock and up to 6 GROMS from commonly used cartridges inside a TI99/4A console. Maintenance is also available from the user groups.
A very clever console tester has been developed which allows a seemingly "dead console" to perform its own diagnostics and in many cases allow the diagnosis of which chip needs to be replaced in less than 5 minutes.
TISHUG in Sydney operates TEXPAC BBS (members only) on an expanded TI99/4A. The Newcastle and Sydney groups both publish comprehensive monthly magazines for their membership and these magazines are exchanged with other active TI user groups world wide. The monthly meetings of the user groups provide tuition in programming languages, "how to use" sessions for the latest application programs, help with "build it yourself" hardware projects and a cordial meeting place where friends can discuss their problems and triumphs in computing.
If you know someone with a TI99/4A in the cupboard, covered by dust because they think there isn't any support for the machine, then please do them a big favour and tell them about the the user groups which are still very active.
(Ross Mudie, SYSOP, TEXPAC BBS, 29/9/90)
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For more information contact The Hunter Valley 99'ers Secretary, Brian Woods 049 662307 or TISHUG PO Box 214, Redfern NSW 2016 ....

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[END OF ARTICLE]
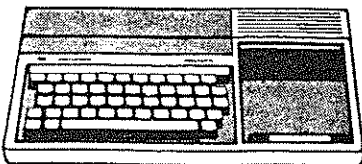
9-DEC 21:36 New Uploads
RE: Hi There (Re: Msg 41541)
From: TINET To: GLOBAL01

We would like to offer upgrades to ROS 8.14 series, but it is just not possible, it would be too hard to change one thing when we know so many problems exist with it. I will not even use it today, I could not trust my DATA to a system which is falling apart into today's machines. ROS 8.14 was a good product back in 1989 which it was released, but recently with more devices and programs on the TI99/4A market place since then, and more coming, it will just not hold up. Too much was not known about the DSR design and other small TI99/4A rules, that make writting a new system the only way. RAMOS was started from a clean sheet of paper, no code was taken from ROS v8.14, although it might have been quicker to design, we did not want to take a chance and use old code which was not correctly designed in the first place. Saying the quality would not be better in RAMOS is not understanding OPA's programming in the first place. RAMOS is our project and product. It is designed for the future. It is not ROS 8.14, an effort over the years of many different programmers, none having the full picture of the TI99/4A design or having the hardware which is available today. Most of the work in RAMOS went into making it work correctly with other cards, mainly because most cards on the market in the TI99/4A never had a good designed DSR in the first place. OPA has found over the years, that one programmer can break a rule, but two cannot break the same rule. So in RAMOS, we designed it using TI's own ways and rules. Not one rule is broken, so nothing crashes no matter what you use. In the new manual we point out any problems which we cannot fix nor are causing in first place. You cannot except the ROS or RAMOS to solve a problem which really exists because of two other cards not being compatiable to each other or the main TI99/4A system. Saying the quality of our new efforts will be just as bad as our first, is saying that we cannot learn from mistakes or like saying Lotus' latest product, is just as slow and buggy as their first basic version of 1-2-3.

Ohhh Gary, what a load of utter codswallop! This reminds me of the FUD (fear, uncertainty, and doubt) campaigns by various computer companies over the years. IBM used to be the champion, but in recent years in the PC wars, Microsoft have been the undisputed kings of FUD. There is a fairly standard pattern to it. All of a sudden the existing products that were once the latest and greatest, usually the competition's but sometimes your own, rapidly become brain-damaged health and safety hazards soon to be swept away by some new and wonderful development just over the horizon (no pun really intended). Is everyone waiting breathlessly for the Microsoft marketing machine to bring you "Chicago" for your PC? Were you waiting on Windows NT before that?

Now OPA's premier product, ROS 8.14 seems to be getting the treatment. All of a sudden we all need to buy RAMOS to lift us from ROS 8.14's depth of depravity. I will stick by my previous estimates of the worth of ROS 8.14. It is a significant improvement on what came before, and is quite a good and usable program. Most of the problems with it have stemmed from the somewhat flakey hardware of the unfortunate HRD-3000 series. It is not perfect by any means. It needs some more sense of good system design and proportion, and the attention of a real 9900 code expert to get the execution right. I think the main problem has been "featuritis", most of the design attention having being squandered on adding more and more proprietary bells and whistles, while losing sight of the basics.

So provide a lean, mean, and tightly focussed ROS right now! Let the promised RAMOS sell on its own merits as a more comprehensive product when it is ready. OPA will only lose whatever goodwill it may have left in the TI99/4A community if it attempts to promote sales of the new product by refusing to make minor but obvious and significant upgrades to the present one in order to generate a sense of perceived obsolescence. And what did happen to those speech programming aids that were touted long ago?

Tony McG

41636 15-DEC 01:09 New Uploads
RE: Hi There (Re: Msg 41570)
From: TINET To: GLOBAL01 (NR)

I would wait for "Chicago". I have been running it on one of our PCs and it will be worth the upgrade at least on the Windows side. But that is over 18 months away. RAMOS is here today. We have been working on the next series of ROS products, and RAMOS is the outcome, after two years of work. RAMOS is a lean, mean, ROS available today. Would you want to wait another two or three years for ROS 8.20, when the work has been already done. We could have easy called RAMOS a new version of ROS, but it is not. The old system was at its limits, less than 30 bytes free and falling apart, and I will say again, not becuase of our own bad programming, but because of other third-party products, and software which does not follow the correct TI99/4A design. RAMOS does, and is written by the best 9900 experts, OPA. Saying ROS 8.14 needs a real 9900 expert, is saying we (OPA) do not know our business. 9900 is all we do, 16 to 20 hours a day, 6 days a week, supporting 9900 programs, and building hardware is all we do. OPA has produced many programs over the years for the TI99/4A world, and many more for other 9900 projects over the world. RAMOS is just the next step in RAMdisk software, and future storage devices. RAMOS is not just for old ROS users, it will be produced for all RAMdisks and memory cards past and preent and future. RAMOS directory (our replacement) for MENU, is the best power-up system on the market, supporting 80 columns, hard drives, and hundreds of program titles/pathnames. THe only way to rate a program is by seeing it. And once you do, you will be amazed.

I have not mentioned in my other messages, any details about our marketing plans. You have just assumed, that just because we have called it RAMOS, we will not support our customers who have bought ROS 8.14. We will support the old ROS users, and offer special prices on RAMOS, in the same price range, that any upgrade to ROS 8.14 would be offered at.

Gary,
The Delphi delayed-response typing gremlins bit me at the end of that last reply, so I will continue it off-line and then post it.

I have found that that the TI99/4A community covers a wide range of age and expertise. Some of the survivors are established professionals in their own fields, quite distinct from computing, some have related expertise, and there is even the occasional engineer with long experience in the 9900 series. It does seem to have an nostalgic appeal for engineers. Most of the people in these categories have access to other computing platforms, but still enjoy working with their TI99/4A. So there are people out there, with an interest in the TI99/4A, who are quite capable of making judgments on the quality and professionalism of product design. I am just adding my piece to the general discussion. And right across the board, from beginner to expert, users can all tell when product has been paid for and not delivered.

Why do they still like it? One reason is that it exemplifies a smaller simpler world, where programs were very tightly written to do what was needed with minimal hardware resources. A pleasant change from the PC world where bloat and featuritis are the by-words (freshman college textbooks are plagued by the same diseases, so it is not just computers). Also I do not like to see PC software publishing practices coming to the TI99/4A world (there were enough problems with fly-by-night operators in the early days). These practices in the PC world are currently exemplified by Microsoft, but are widespread. I talked about these in the previous Forum post. I get the feeling that OPA is consciously trying to model itself on the Microsoft way. So current software product X is inadequately designed and/or full of bugs; well we have an update coming that you can BUY; no, we are not going to fix it.

Once again, you have the knowledge and the code for the current HRD ROS, so why not make the changes (that at your end would be quite small, quick and easy to do) to make ROS 8.14 be lean, mean, well behaved, and fit the scale of the HRD 3000 and 4000 series cards it is meant for. If necessary, throw out one or other marginal proprietary additions to make room. Do I get the feeling that OPA is afraid that if ROS 8.14 were to be given the final polish I have been recommending, that not enough people would be interested in the promised RAMOS any more for its own sake? And we are still waiting for the wonderful speech software promised several years ago.

Tony McGovern

41643 15-DEC 22:59 New Uploads
RE: Hi There (Re: Msg 41642)
From: TINET To: GLOBAL01

Changes to ROS 8.14, would not be small and quick. It has been replaced by RAMOS. If you want to call RAMOS, ROS 8.20, be my guest. But RAMOS is our own system. ROS 8.14, we only added to from the original 7.3 series. There are many things in the original 7.3 design, which are not correct and being in the business of writing 9900 software, we could not bear to deal with the old ROS 7.3 code again. Making it lean and mean is not possible without re-writing many sections of the code. Almost the same as you saying the next update to Funnelweb Editor will need a re-write from the orginal TI-Writer design.

Two years ago, when we started the RAMOS project, we thought it was best to start from a clean sheet of paper, as it would be quicker and we would be sure not to include any old habits from the 7.3 code. RAMOS is just that, after two years, a quick, lean, mean and the best well-behaved program. Why wait two years again, for us to start to re-write ROS 8.14, when RAMOS is available today? That would be silly. If you do not like the idea of buying a new version for your RAMdisk. No one minded buying ROS 8.10 back in 1989 when it came out. For us to produce an update again for ROS after seven updates during the 1990, 1991 years, could not be done anyway as we could not afford to ship out 3,000 copies for the little money we have seen from our efforts in the ROS project. Any such update to ROS would need to be a charge, like ROS 8.10, and RAMOS is just that: another program which must be paid for, but it is more than just quick and dirty update for ROS, which would need again and again more quick and dirty updates. It is a whole new design which will not need updates for many years, maybe never, as it is built correctly from the ground up, and is designed for the future, supporting needed now and later on.

Business wise it just would not pay to kept sending out 3,000 updates each time another problem is found in ROS 8.14, and each time another third-party hardware device is produced. As I stated before, more problems exist in ROS because of other hardware devices which are not designed to TI99/4A specifications. As such, the rules ROS broke, were also broken by later devices like HFDC, etc. As I mentioned before, one programmer can break a rule, but two cannot. As such, RAMOS is designed to TI99/4A specifications so it works correctly with all devices out there, and will work with any future device as any third party hardware is welcome to break the rules now, as since RAMOS is not, no problem such occured.

I think enough has been said on this matter, if you still do not seem to grasp our thinking about the RAMOS project after ten messages over a week and half, going over and over again on the same ground, it is time to take a hard look at what you are talking about, and to look again at what we have said. I welcome any more comments on this matter from other DELPHI'ers, but at this time no one seems to have stated their opinion on this matter.

As for your second matter you have mentioned twice, maybe you have forgetten our old OPAnews issues from 90/91 years, and in many messages on here and in our CO's on DELPHI, that speech project was listed only has a project in works, and its release would depend on customers' interest. At the time we started the project, no one wrote us that they wanted the program, we got one or two letters about it years later, and about ten recently. More and more people seemed to want the program, only because they were using it as fuel to make fire on our business not getting our orders and "promised" software. I will state again we never got an order for our speech software, as we never stated a price, and never stated we would produce the software, we only "promised"if we saw big enough market to pay for the research and development and legal paperwork. The legal side is why we decided to not produced the program, even with very small market (less than ten), as TI still owned the rights to the main core of our software, and every word we had, which we planned on releasing in diskette format. Unless we saw a market of over thousands units, it would not be worth spending a year of R&D in software writing, and in paying the legal costs to arrange the rights to use the software and database of disk-based words originally recorded by TI for their products.

TTYL (gary)

Gary,

Well I will say "out" also on this topic with this final missive, as nothing seems to be able to penetrate the layers of obfuscation and deliberate avoidance of the issues. Of course you can easily put out a quick update to the ROS at essentially zero distribution cost to you: what on earth is this very Delphi network that you are on good for then? As for reading what you say, I do and very carefully, in order to pick out what is really being said, as distinct from the sales pitches and fast talking. Time to leave that effort to others.

Of course a lot of the others, especially those trying to get in contact with you over paid-for and undelivered product, had long since given up on getting any communication at all to read or decipher. So the "speech" was just vaporware. Now we know we will accept that and factor it in to our personal estimates of what OPA promises elsewhere. I think OPA does need to do something to get some credibility in the TI99/4A market. Filling TIM back orders would be a start, but that only gets you back to somewhere short of zero. Why don't you try my ROS update suggestion as well, as a mea culpa, and the market may well be very forgiving?

Tony McGovern

This month we will take a look at the IF statement and the END statement. The IF command is extended to numerical expressions and the logical relations that we will use in this lesson are:

=,   >,   <,   <>

The > and < symbols may be a bit confusing for those who have not used them before but by the time you have practiced this lesson you will have become quite adept in using and understanding them.

The IF statement is intricate because it involves two elements: a test for truth and a possible branch in the program. Because of the branch, the IF may be a part of a non-compact section of code in the program. Most of the confusion comes in seeing what lines in the program logically go together, and how the flow of control moves through the program.

The easiest case is where the IF comes at the end of a section and the branch is back up to the beginning of the section. This is a DO UNTIL... and the exit occurs when the IF fails the test.

Another common case is the "skip or fall through". When the IF is true, some lines are skipped and the next section of code is executed. Otherwise the lines are executed and the control "falls through" to the next section of code.

An elaboration of this avoids the "fall through" by having a GOTO at the end of the section. This forms a DO WHILE...

Now that I have completely confused you we had better get on with the lesson which, when completed, should make all of this preamble mean something to you.

LESSON 16   THE IF STATEMENT WITH NUMBERS, END

Try this: 10 REM *** TEENAGER ***
                 15 CALL CLEAR
                 20 PRINT"YOUR AGE?"
                 30 INPUT A
                 40 IF A<13 THEN 60
                 50 IF A>19 THEN 70
                 55 PRINT"YOU ARE A TEENAGER!"
                 56 END
                 60 PRINT"NOT YET A TEENAGER!
                 61 END
                 70 PRINT"GROWN UP ALREADY!"
                 90 END

This IF command is like the one that you used before with strings (see lesson 13). Again we have:

    10 IF phrase A is true THEN line number

"Phrase A" can have these arithmetic symbols:

    =   equal to
    >   greater than
    <   less than
    <>   not equal to

Each "phrase A" is written in "math language" but you should say it out loud in English. For example:

    A<>B   is pronounced   "A is not equal to B"

    5<7   is pronounced   "five is less than seven"

THE END COMMAND

The program may have zero, one, or many END commands.

Rule: The END command tells the computer to stop running and go back to the command mode.

That is really all that it does. You can put an END command anywhere in the program.

PRACTICE

For these problems, LET A=7 and LET B=5 and LET C=5.

Say each "phrase A" out loud and circle T or F for true or false:

```
        A = B    T F
        A > B    T F
        A < B    T F
        A < C    T F
        B = C    T F
        B < C    T F
        A<> B    T F
        B<> C    T F
```

Example, say: "A is equal to B, or 7 is equal to 5, that is FALSE".

or "A is greater than B, or 7 is greater than 5, that is TRUE".

GUESSING GAME

```
        10 REM --- GUESSING GAME ---
        15 CALL CLEAR
        20 REM-----INSTRUCTIONS
        21 PRINT "TWO PLAYER GAME"
        25 PRINT
        30 PRINT "FIRST PLAYER ENTER A NUMBER FROM 1
        TO 100"
        35 PRINT "WHILE SECOND PLAYER ISN'T LOOKING"
        40 REM-----CHOOSE NUMBER
        41 INPUT N
        45 CALL CLEAR
        47 PRINT
        50 REM-----MAKE GUESSES
        51 PRINT "MAKE A GUESS"
        52 PRINT
        55 INPUT G
        60 REM-----IS THE GUESS RIGHT?
        61 IF G=N THEN 90
        65 REM-----IS THE GUESS TOO SMALL?
        66 IF G<N THEN 70
        67 REM-----GUESS WAS TOO LARGE
        68 PRINT "TOO LARGE"
        69 GOTO 80
        70 REM-----GUESS WAS TOO SMALL
        71 PRINT "TOO SMALL"
        80 REM-----GET ANOTHER GUESS
        81 GOTO 50
        90 REM-----THE GAME IS OVER
        92 PRINT
        95 PRINT "YOUR GUESS IS CORRECT!"
        98 END
```

Save this program on tape or disk.

When you run this program and your guess is wrong the program skips over lines to tell you whether your guess was too low or too high and then goes to line 81 which sends you back to line 50 which asks you to have another guess. When your guess is correct line 61 sends you to to line 90 and the program prints the message:

        "YOUR GUESS IS CORRECT!"

and the program ends.

Assignment 16:

1. Draw the road map for the Guessing Game program. Lines 61 and 66 have "forks in the road". Lines 69 and 81 are jumps to other lines.
2. Write a program which says something about each number from 0 to 10. The player enters a number and the computer prints something about the number entered ie: "three strikes, you're out" or "seven is lucky" etc..

3. Write a digital clock program. It uses a timing loop to count seconds. The program must ask you to input the current time in hours, minutes and seconds and the clock then counts seconds and prints out the hours, minutes and seconds every second. When 60 seconds have gone by the computer adds one minute to the minutes and puts the seconds back to zero. The same with the hours. Run the clock for a long time and adjust the timing loop so that the clock keeps good time. Hint: for the timing loop choose a number between 200 and 250 as a first try. When you have finished the program and the clock's working reasonably accurate, modify the program so that only one time is shown on the screen instead of having them scroll off the top of the screen.

4. Write a program which allows one player to enter a card suit and number (1 to 13) and a second player has to guess the card by guessing the suit first and then the card number. The program must keep score of the number of tries the player has made.

ANSWERS TO LESSON 15

Assignment Question 15-1

The following program uses the LET and INPUT shortcuts.

```
10 REM WHO DUNNIT
15 CALL CLEAR
20 LET X$="BUTLER"
30 INPUT "WHO DUNNIT?":A$
40 IF X$=A$ THEN 90
50 PRINT
60 PRINT "CLUE: ","SERVANT"
70 PRINT
80 GOTO 30
90 PRINT "YES, YOU GUESSED IT"
95 PRINT "THE ";X$;"DID IT"
```

Note: You cannot use the "LIST" shortcut in a program however, if you have a parallel printer, try the following:

Load and run the above program and press the FCTN and 4 keys at the same time to break the program, then type:

                    LIST "PIO"

Press "ENTER" and bingo your program will be sent to the printer and you will get a typed copy of it. Very good for sorting out any mistakes that you have made whilst typing your program.

Assignment Question 15-2

```
10 REM!!!VACATION PROGRAM!!!
15 CALL CLEAR
20 PRINT : : : :
25 PRINT "VACATION CHOOSING PROGRAM"
30 PRINT
35 PRINT "PICKS YOUR VACATION BY THE"
40 PRINT "AMOUNT YUO WANT TO SPEND"
45 PRINT
50 REM    INSTRUCTIONS
55 PRINT "ENTER THE AMOUNT IN DOLLARS"
60 PRINT "THAT YOU CAN SPEND"
65 PRINT
70 REM    GET DOLLAR AMOUNT
75 INPUT D
```

```
80 PRINT
85 M$="FLIP PENNIES WITH YOUR KID  BROTHER YOU MISER."
90 P$="THROW A PARTY ON YOUR LAWN  YOU SCROOGE."
95 Q$="HAVE A WEEKEND AWAY IN THE  COUNTRY WITH YOUR
LOVER."
100 R$="TAKE YOUR FAMILY TO THE    GOLD COAST FOR TWO
WEEKS."
105 S$="GO ON AN EXTENDED TOUR     AROUND AUSTRALIA."
110 T$="TAKE YOUR WHOLE FAMILY ON A WORLD YOUR."
115 IF D>100 THEN 130
120 PRINT M$
125 GOTO 220
130 IF D>500 THEN 145
135 PTINT P$
140 GOTO 220
145 IF D>2000 THEN 160
150 PRINT Q$
155 GOTO 220
160 IF D>5000 THEN 175
165 PRINT R$
170 GOTO 220
175 IF D>50000 THEN 205
180 PRINT S$
185 GOTO 220
190 IF D>500000 THEN 205
195 PRINT T$
200 GOTO 220
205 IF D<1000000 THEN 195
210 PRINT "BUY A COSY YACHT AND CRUISE THE WORLD WITH
YOUR FAMILY."
215 END
220 PRINT : : : :
225 PRINT "WANT TO MAKE A BIGGER SPLASH? <Y/N>"
230 INPUT A$
235 IF A$<>"N" THEN 20
240 GOTO 215
```

Note:The spaces between words in lines 85,90,95,100,105,
     and 110 are important to get a good screen
     layout when running this program.

Assignment Question 15-3

```
10 REM CRAZY
15 CALL CLEAR
20 PRINT "WHAT IS YOUR NAME?"
30 PRINT
35 INPUT N$
40 CALL CLEAR
45 PRINT
50 PRINT N$
55 PRINT
60 RANDOMIZE
65 Z=INT(3*RND)+1
70 ON Z GOTO 75,85,95
75 PRINT "HAS ONE BRICK SHORT OF A   FULL LOAD"
80 GOTO 100
85 PRINT "HAS BATS IN THE ATTIC"
90 GOTO 100
95 PRINT "HASN'T GOT BOTH OARS IN THE WATER"
100 PRINT : : : :
105 PRINT "WANT ANOTHER GO? <Y/N>"
110 INPUT A$
115 IF A$<>"N" THEN 25
120 END
```

Note: The spaces between words in line 75 are important
      to get a good screen layout.

Assignment Question 15-4

```
10 CALL CLEAR
20 CALL HCHAR(11,7,46)
30 GOTO 30
```

or

```
10 CALL CLEAR
20 CALL VCHAR(11,7,46)
30 GOTO 30
```

Assignment Question 15-5

```
10 CALL CLEAR
20 CALL HCHAR(3,4,42,9)
30 GOTO 30
```

Assignment Question 15-6

```
10 CALL CLEAR
20 CALL VCHAR(4,6,46,9)

30 GOTO 30
```

Next month we will take a look at colour graphics but in
the meantime make sure that you continue to revise the
lessons that have already been published in the TND's.

Bye for now.

TREASURER'S REPORT

by Cyril Bohlsen

Income for previous month .... $ 959.00

Expenditure for previous month .. $ 1376.61

Loss for previous month .... $ 417.61

Membership accounted for $ 656.00 of Income.

Shop sales .... $ 303.00 of Income.

The expenditure was made up of the following

Printing & Postage of TND .... $ 285.45

Purchase of 80 Column Card Parts . $ 886.50

Donation to St Johns Ambulance ... $ 50.00

Shop Club Expenses .... $ 154.66

    Once again we exceeded our income with the
first payment for the replacement 80 column
cards being made for the club members.

MAIL TO : ALL

MAIL FROM : SHIFTY

SENT ON Wednesday 11/05/94 at 20:52:42
ATTENTION--> I now have a copy of the Latest TI emulator
for IBM computers This is version 5.1 this software
truly transforms your IBM into A TI .
IT allows you to use three directories DSK1 DSK2 AND
DSK3 AS THREE TI disk drives. You can use your IBM
printer as a TI printer, it also comes with EXTENDED
BASIC, TI LOGO II AND MORE
YOU GOT TO SEE IT TO BELIEVE IT.
IF you want a copy of the software CALL 750 9801 after
6PM anytime.
NOTE IF you boot the emulator up from your autoexec.bat
file you will NEVER know that you are using an inferior
IBM

ONELINER (ED)

Two little ears of Queensland wheat ran up a hill. What
were they when they reached the top?

Puffed wheat.

Mouse choices

I currently have an AT with 2 serial ports, one of which is connected to a modem, and the other has a mouse attached. However, I have recently purchased an external fax modem for my laptop, and would like to use it with my desktop machine when I'm back at the office. The fax modem connects to the serial port, so I will need to add another port for the fax. What is my best option — stick with the serial mouse, and add an extra COM port (or two) for the fax modem, or put the fax modem on COM2, and replace the mouse with a bus mouse?

David Nichols
Frenchs Forest, NSW

While Dos and many application programs support up to four serial ports, there is a problem due to the lack of enough interrupt lines on the PC. To overcome this limitation, when four serial ports are installed, they share two of the interrupt lines, with the odd-numbered ports on IRQ4, and the even numbered ones on IRO3. The problems involved were discussed in this column in the August 1990 issue.

If you were to add one or two extra serial ports to your machine, there is a good chance that an interrupt conflict would arise, especially if the fax software operates in the background, which is often the case.

However, changing over to a bus mouse should solve the problem, without causing any interrupt conflicts, since the bus interface card can usually be set to use interrupt lines which are normally vacant.

For example, the Microsoft 'InPort' interface card can be set to IRQ2 through IRQ5, inclusive. On most machines, one of these lines will be unused, and often there will be a choice of free lines. In your case, IRQ3 and IRQ4 are taken up by the two COM ports. However, IRQ5 is usually free (unless you have two printer ports), and IRQ2 is hardly ever used in an AT machine such as yours.

The only time you are likely to come across interrupt conflict problems with a bus mouse, is if you also have other 'non-standard' hardware installed, such as a LAN card or a scanner interface. In these cases, the only solution may be to use one of the serial port interrupt lines, in which case you will have to forgo one of the serial ports, leaving you no better off than a serial mouse.

This sort of problem doesn't just arise with serial ports and mice, but any device which needs an interrupt line. The trouble with interrupt-driven add-ons is that the number of interrupt lines in the PC is limited, and while the AT has almost twice as many interrupt lines as the XT, few cards seem to use them. The PC and XT only have eight interrupt lines, not counting the non-maskable interrupt, which is used to signal the processor that a parity error has occurred.

IRQ0 and IRQ1 are used for the timer and keyboard, and never see the light of day on the expansion cards. IRQ2 is reserved for the hard disk on XT machines, although it is free on ATs. IRQ3 and 4 are used by the two serial ports, while IRQ5 and 7 are assigned to the first two parallel ports. This leaves IRQ6, taken up by the floppy controller.

So, as you can see, on a full-populated XT, there are no spare interrupt lines. Most non-standard add-on cards therefore have a selectable interrupt level, so that if any of the interrupt lines are available, it can be used. For example, if there is no second parallel port, then IRQ5 is available for other uses.

The other solution is to share an interrupt line between two devices, which works with varying levels of success. On systems with four serial ports, they usually share the IRQ3 and 4 lines in pairs. This usually does not cause any problems as long as the software which is associated with each port is not run simultaneously. For example, if you have two different modems on COM1 and COM3, but only use one at a time, then there will probably be no problem.

However, if one of the ports is supporting a serial mouse, and the driver is resident when the other port is used, then a conflict will almost certainly arise. Most Dos software assumes that it has the interrupt line to itself, and gets horribly upset if this is not the case. There is no reason why devices cannot share interrupt lines, so long as the software's aware of this.

Another common trick is to allow a tape drive interface to share the same interrupt lines as the floppy controller, the assumption being that both are not used at once.

The AT is somewhat better off, with seven additional interrupt lines. In these machines, the IRQ2 line is connected to the output of a second interrupt controller, giving another eight IRQ lines, minus the old IRQ2 line. The line on the

expansion bus which is IRQ2 on XT machines in reality is IRQ9 on ATs, but the BIOS re-directs this so that the software still sees the line as IRQ2. IRQ2 (or 9) is not used by the hard disk, leaving it free for odd-ball cards. IRQ8, 13 and 14 are the only reserved lines, used by the real time clock, maths co-processor, and hard disk, leaving four addit-ional interrupt lines unassigned.

The difficulty with these extra lines is that they are part of the additional set of lines on the AT expansion bus, so that XT-compat-ible (8-bit cards) cannot access the lines at all. The only exception that I am aware of is the LANtastic interface card, which although it is an 8-bit card, has the extra 'finger' to connect with two of the interrupt lines in the extended bus, allowing AT machines to use one of these lines if available. It's a pity that more card manufacturers don't do this; it would make expansion of ATs much less troublesome, espec-ially where lots of hardware has to be added to a single machine.

BIOS drive tables

I recently purchased a 90Mb IDE hard drive from a well known supplier. The supplier implied that adding the drive to my computer would be a simple procedure, but as I have found, this is far from being the case. The problem stems from an incompatibility between the drive's config-uration and the drive types supported by the BIOS in my PC (an Epson AX2). All of the drive types in the BIOS table are for 17 sector drives, while the new IDE drive has 33 sectors. I could set up the drive using a drive type in the table with only 17 sectors, but would end up with a 40Mb drive instead of the 90 I paid for.

The supplier said that the drive could use sector translation, where a drive type from the BIOS table with a similar capac-ity is selected, and the drive's in-built controller translates the BIOS calls to the real positions on the disk. While this works, the speed, as reported by CoreTest, was about 30 per cent slower than before.

I contacted Epson with my problem, and their technical support people told me that they could supply a customised BIOS with the correct formula in one of the unused locations in the BIOS table. This is the option which I ultimately pursued, although the new BIOS cost me $90. It works extremely well. Is obtaining such a BIOS the only real way around this sort of problem, or is there another solution which I have missed?

J Rowe
Arncliffe, NSW

The situation you describe is not uncommon, with drives starting to appear on the market with capacit-ies far in excess of those which were around when the computer BIOSes were written. The BIOS drive table consists of a number of fixed-drive types, with pre-defined numbers of tracks, heads, and sectors. If the drive you're adding to the computer matches one of these built-in formulas, then there is no problem. However, if they do not match, a number of possible solutions can be used to get around the problem.

The incompatibility arises not only with IDE drives, but also SCSI and ESDI drives. Some controllers have their own drive table on-board, which replaces the system BIOS table, and is specifically designed to support drives compatible with that controller. One ESDI controller which passed through our offices recently supported 256 different drive types!

However, if the controller (which is actually part of the drive in an IDE configuration), does not have its own drive table, other solutions need to be sought.

OnTrack's Disk Manager is one of the most popular software solutions, often shipped with non-standard drives. It allows large non-standard partitions to be defined on drives with track, head and sector counts different from those in the BIOS table.

A customised BIOS (such as you have obtained), is a more elegant solution, but you will need to go back to your dealer for this. Before going down this path, check to see if an updated BIOS is available which has the required drive parameters built in as one of the standard types.

A number of BIOS' also have a user-customisable drive type, which allows the relevant parameters to be entered from the setup program. Newer AMI and Phoenix BIOSes have this feature, but I am unsure whether Award BIOSes support it or not. With a user-defined drive type, the drive is selected from the setup program in the usual way, but then the individual parameters need to be entered in the table.

Thank You For Holding,—
Hello? Are You There?—
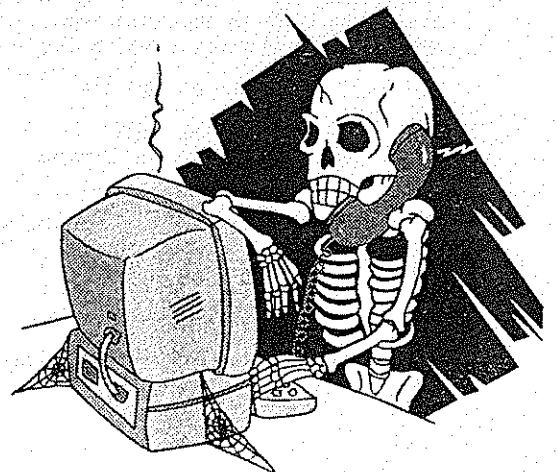
REGIONAL GROUP REPORTS

Meeting Summary For June

Central Coast	11/6/94 Saratoga
Glebe	09/6/94 Glebe
Hunter Valley	11/6 18/6/94
Illawarra	07/6/94 Keiraville
Liverpool	10/6/94 Yagoona West
Sutherland	17/6/94 Jannali

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 or third Saturday 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.

----

*   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 ***

10th June 1994
My Place : 34 Colechin St. Yagoona West

8th July 1994
My Place : 34 Colechin St. Yagoona West
for now Larry.
Liverpool Regional Co-Ordinator

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.

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.

JUNE MEETING - 4th JUNE

JULY MEETING - 2th JULY

****

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

June	-	11th June
July	-	16th July

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.

****

This months list of words is based around the subject of PHOTOGRAPHY

```
D X E F B G I Z F I H B J E G D
D B G W J S K I E Z M D R N C F
I V K Z U V L M Y G F U I A X F
O H N C C T U D A R S P M F B C
R L O S E L P R E O O E L U Q O
A F H R S F H D P L R V T J X L
L H S I I P N X E A L C E Y G O
O J O L A I E V L E J R M T G U
P N M I F S E G N I U K I Q I R
M C D W Y D H S D T G A W H R X
H S E T S U J U R I R H S N D B
V I V P 1 A Z E T T R A T G V B
V W E D S G P L R T L T J Y N A
V E S Z R A K O Z F E C R E X O
D P T G N B P D A S C R P A E X
R E T E M T H G I L Z R B J C Q
```

Find these hidden words

HOW TO PLAY

All the words listed below appear in the puzzle horizontally, vertically, diagonally even backwards.

APERTURE	CAMERA	CARTRIDGE
COLOUR	DEVELOPING	DIAPHRAGM
EMULSION	EXPOSURE	FILM
FILTERS	FLASH	FOCUS
LENS	LIGHT	LIGHTMETER
POLAROID	PORTRAIT	SHUTTER
SPEED	VIEWFINDER	

This puzzle was compiled using ASHLEY LYNN'S programme "Word Puzzle" which is avaliable from the TIsHUG shop.