TIHUG NEWS DIGEST

Focusing on the TI99/4A Home Computer

Volume 15, Number 2 March, 1996

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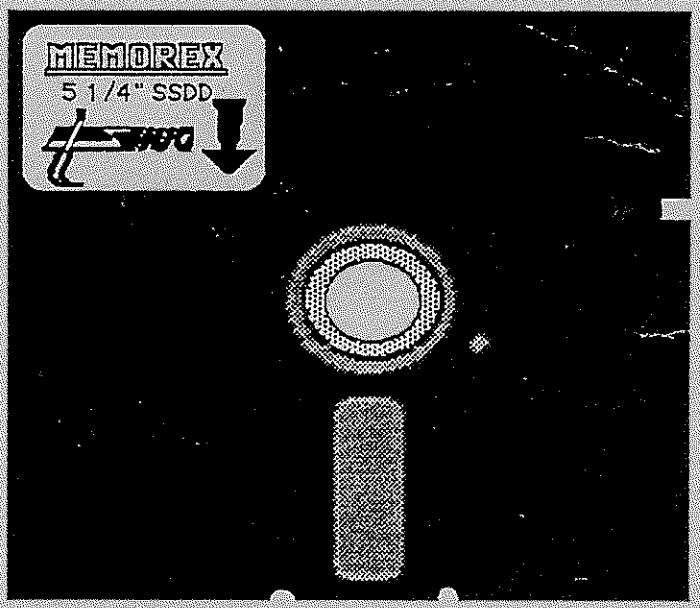

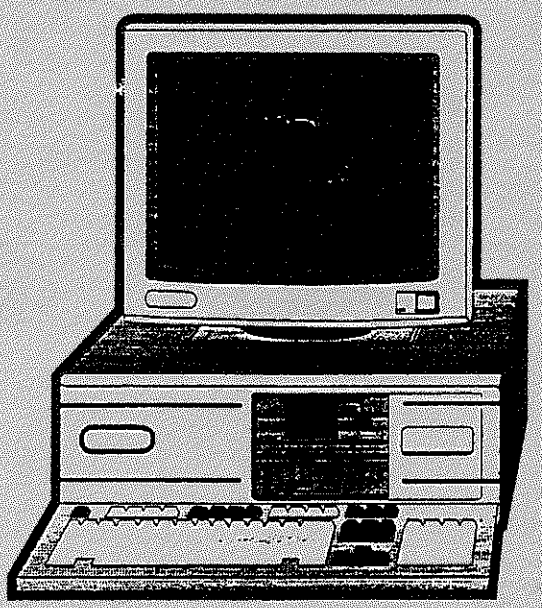

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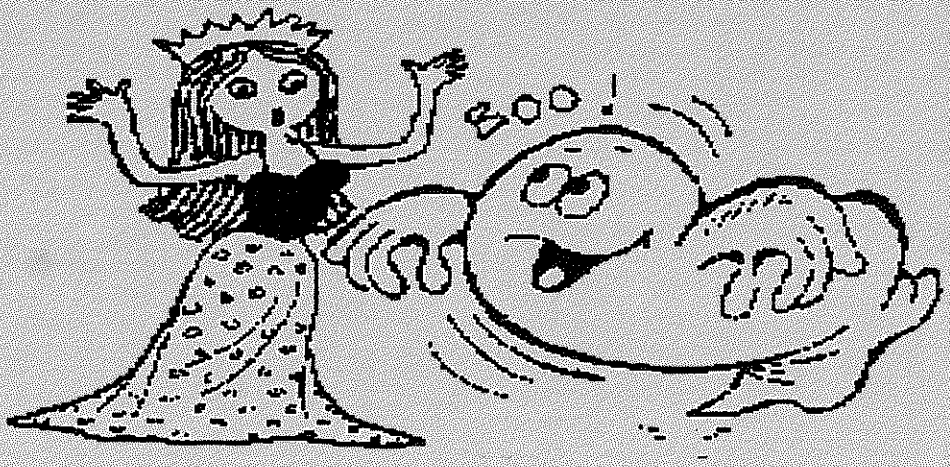

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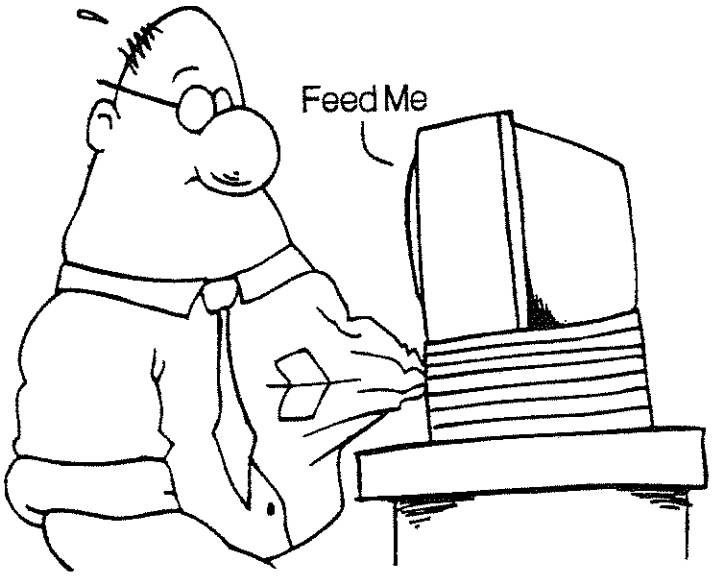
Membership and Subscriptions

Annual Family Dues	$35.00
Associate membership	$10.00
Overseas Airmail Dues	A$65.00
Overseas Surface Dues	A$50.00

TIsHUG Sydney Meeting

The March Meeting will start at 2.0 pm on the 2nd March 1996 at Meadowbank Primary School, Thistle Street, Meadowbank.

Printed by
Kwik Kopy West Ryde



EDITORS COMMENTS

The February meeting was a busy afternoon, with Peter and his IBM system, showing some of the latest products avaliable.
Larry was there with his U beaut system demenstrating some of his game collections.
Stephan came along with his newly gained IBM system trying to sort out some small problems.
But Dick wasn't there..... until late anyway
Well hope to see you all at the next meeting.

MEMBERSHIP RENEWALS

In order to streamline membership renewals, it has been decided that all payments for membership or membership renewals will be made to the Secretary either at club meetings or by mail to the club's address (shown on the inside front cover of the TND).
The practice of accepting membership or membership renewal payments in conjunction with the payment of goods will be discontinued forthwith as this, at times, has resulted in renewals not being notified to the Treasurer and, therefore, he has not been able to update the computer listings used for printing our magazine mailing labels. Consequently, some members have inadvertently been removed from the list and have not been sent their TND.
The Secretary will maintain a receipt book exclusively for membership renewals and new membership fees and will be responsible for ensuring that the Treasurer is advised of all new members and member renewals each month before the labels are printed out, thus ensuring that no financial member misses out on receiving his magazine.
The Directors would appreciate the co-operation of members in ensuring that their renewal payments are made to the Secretary at all times.

END OF ARTICLE

A SERIOUS MATTER

By Percy Harrison (Director)

At the February meeting of our club I spoke to the members who were present about a serious and somewhat embarrassing incident which occurred during our Christmas barbecue held at the Meadowbank Infants school on Saturday 2nd December 1995.
At that meeting considerable damage was done to books and materials in the classrooms in which our computers were set up. Also, a number of items of costume jewellery were stolen. This jewellery was the property of one of the teachers who had purchased it during a holiday in the USA and had loaned it to the children in her class to use in a Christmas play which was scheduled to be held the week following our meeting. This jewellery, though not very expensive, was of sentimental value to the teacher and cannot be replaced. Whilst we do not know for certain which child took the jewellery, we would like the parents of each child present at the meeting to thoroughly check with their children and, if they find that one of them was responsible, to return the items to me, either by mail or by dropping it into my letterbox, at the clubs' address on the inside cover of this magazine. No identification of the person is required and no questions will be asked; our main concern is to recover the jewellery and return it to the teacher.
Damage was also done to the preschool children's playground and a number of palings removed from the fence around that enclosure. This damage, as well as the damage done to the classroom items, was the result of members' children being unsupervised during the time they and their parents were on the premises.
To make matters worse, after we had left the school grounds, hooligans got in and scattered the contents of the garbage bins, containing the leftover rubbish from our barbecue, all over the paved areas between the two school buildings. This was not done by any of our members and to ensure that it does not happen again we will remove any rubbish generated by our activities before we leave the premises.
This is not the first instance of vandalism displayed by children attending our meetings. When we were at Top Ryde Infants school, some of the children apparently amused themselves by having a contest to see who could stab the most goldfish with a pencil resulting in a number of goldfish being killed while a couple of other children jumped on a 6 foot plastic blow-up of a cartoon character resulting in irreparable damage. All had to be replaced at the expense of the club.
In order to ensure that such incidents will not happen in the future, children under the age of 10 years will not be allowed in the schoolrooms or the school grounds unless they are fully supervised by their parents at all times. Any further incidents of this nature will certainly result in the club losing the use of the school for both our meetings and our TND paste-up sessions.

END OF ARTICLE

HELP LINE

"USERS SUPPORT COLUMN"

We hope to be able to HELP anyone with problems, with programs, utilities, etc. In this column We are asking for those with answers to these problems to WRITE, RING or LEAVE a message on the BBS for the EDITOR, or SPEAK to me or any other Director of TIsHUG.
The answers printed in this column are not the be all to end all, just answers merely to help each other with tried and used methods.

Question NO.1 *how can I print more than 80 columns in TI Writer, while printing in condense print. (desperate Dick)*

Answer: At the beginning of the page in in edit mode put in your left and right margin settings EG: (.LM0 RM128) that is for condensed at 16 words per inch and using the full 8 inches of width. if you don't want to use all the page width. then multiply the font size by the width of the page that you want to use. (ED. Answer)

Answer to Question 2 TND Vol. 15, No.1

The following was received from Geoff Warner of TIUP Perth.

My experience is that you **can** run your Peripheral Expansion Box (**PEB**) standing on it's side i.e. with the disk drives aligned horizontally, without any ill effects to the drives.
I wrote a brief article in the **TIDBITS** newsletter some time ago suggesting this orientation as a space-saving initiative.
I have been running one of my systems in this fashion for several years with no problems and the second system, the one which was shared with my 15 and 16 year-old children for some years, alternated between the horizontal and vertical, depending upon where it was residing, with no ill-effects. In this case I would suggest that the relocation of the **PEB** is more likely to damage the disk drives than operating them horizontally.
If you want further proof, check out some IBM PCs or clones, and you will see that the vast majority of 5 1/4" floppy drives are mounted horizontally.
My only other suggestion is to set the **PEB** up so that the floppy drives are at the bottom of the re-aligned **PEB**, rather than at the top, i.e. above the **PEB**'s power supply, to eliminate any additional heat build-up in the drives from hot air from the power supply rising if they are aligned the other way around.
Many thanks Geoff for this information.

For Sale

NEC Printer

NEC. Spinwriter model 3520, with attached keyboard.
Has a printer cable to connect straight into the serial output of your computer - comes with a comprehensive manual - can handle paper width's up to 16 inches, that's 136 columns at 10 cpi, will use single sheet or continuous feed paper. has six new ribbons
Perfect text excellent for documents etc.
Can be used as an electric type writer or from the computer
Here are some features of this great printer-

- Buffer memory 2048 characters standard
- Impression control 3 step by operator - 8 step by program control.
- Character set - up to 128 fully formed characters.
- Paper movement - Forward or Reverse, up or down.
- Horizontal Resolution - 120 increments per inch
- Vertical Resolution - 48 increments per inch
- And more

All of this for only ***$50:00*** Please ring Loren West on 047-213739 or catch me at on of the meetings.

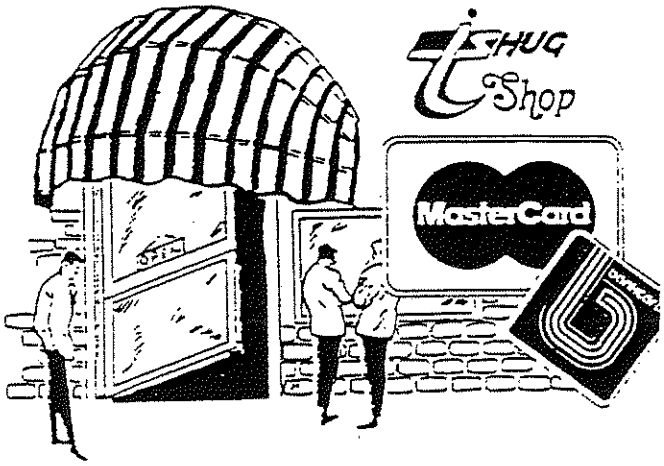
END OF ARTICLE

For Sale

Star Printer

Star Gemini 10X printer in good condition, suitable for the famous TI computer and 99% of our programs, also suited for the IBM.
Comes with two manual's ....1X Users manual and 1X Quick reference manual.
Has the printer cable ready to plug straight into the PIO. port of your computer, also comes with some continuous feed paper - a paper roll attachment, - two spare ribbons.
For only ***$50:00*** Please ring Loren West on 047-213739 or see me at one of the meetings

END OF ARTICLE



TREASURER'S REPORT

by Cyril Bohlsen

Income for January & February ..... $ 887.00
Expenditure for previous month ..... $ 1494.04
Loss for previous month ..... $ 607.04
Membership accounted for $ 100.00 of income
Shop sales ..... $ 787.00 of income

The expenditure was made up of the following :-
Administration ..... $ 43.15
Printing and posting of TND ..... $ 249.09
Shop purchases ..... $ 1201.80

END OF ARTICLE

NOTICE

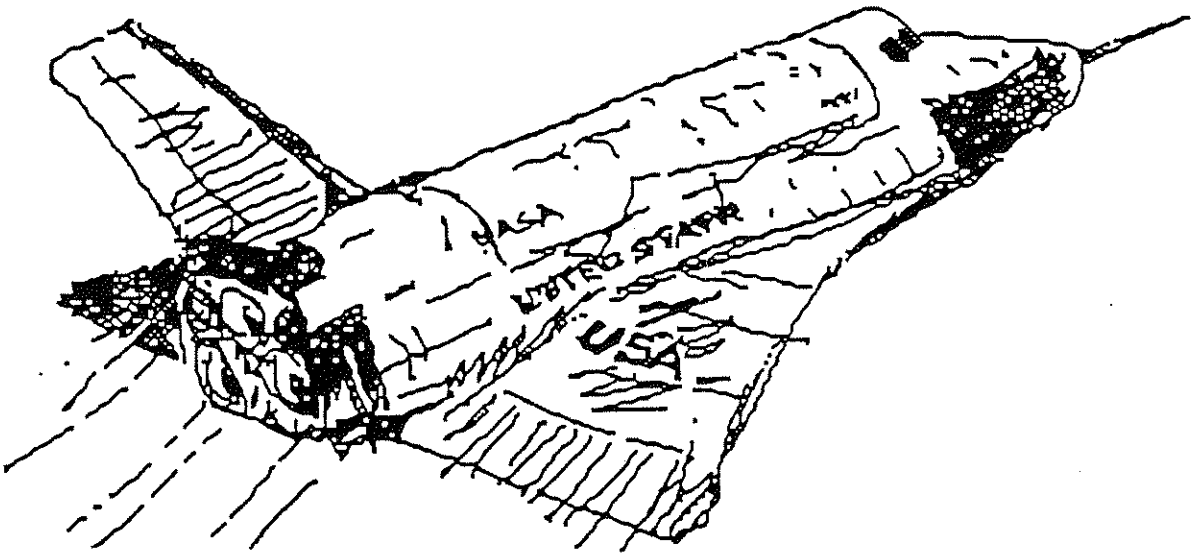
"HOT NEWS !!!"

Jacob from the lower Blue Mountains, has just come in possession of a large variety of computer gear
Early computer technoliogy, literally a trailor load of past treasures, which he will be selling at our next meeting, the proceeds from these sales will be going to our club, so as DICK would say ***BRING YOUR MONEY WITH YOU,*** some of the things mentioned were -

- Class room Word Processors
- Disk Drives
- Monitors
- Keyboards
- Power Supplies
- Some Computer casings
- Wires and cables
- ETC.

You will have to be early to beat me to the bargains.

END OF ARTICLE



GRAPHICS : COMPATABILITY

from TI Users Group, England.

This article has been prompted by a very odd chart of the various Graphics programs for the TI which I came across in a US newsletter- odd because at the end of the day it failed to tell you very much and was decidedly biased! This article also follows -in a way- from the discussion of various formats of disk file. Each type of file is referred to by means of a short abbreviation, details of which are given in the first section below:

1. List of Formats:

TI ARTIST- Fonts (_F files, referred to later as TIAF)
Pictures (_P and _C files, referred to as TIAP)
Slides (_S files, TIAS)
Instances (_I files, TIAI)
GRAPHX.....Clipart, inc fonts (GC)
Pictures (GP)
CSGD.....Pictures (/DT files, CP)
Graphics (/GR files, CG)
Fonts-usual (/CH files, CF)
-care: see note at end!!
Fonts-DocuPrinter (/DP files, CD)
Labels (/LB files, CL)
Letterheadings (/1L files, CH)
JOYPAINT...Pictures (JP)
COMPRESSED PICTURES (JC)
PICASSO....Pictures (PP)
Fonts (PF)
Icons (PI)
BITMAC.....Pictures (BP)
DRAW N PLOT..Pictures (DP)
DRAW A BIT 1.Pictures (DAB1)
DRAW A BIT 2.Pictures (DAB2)
MAX RLE....Pictures: DV80 files or DF128 files (MP)

NOTE: CSGD uses two different sets of /CH files. The font editor creates one set of /CH files, which then have to be converted to another type of /CH file for use. The /CH files referred to here are always the converted files. The conversion program is on CSGD Volume 1.

MUTUALITY:

This section indicates the types of file each graphics program can use from the above list, WITHOUT using an external conversion utility. The ability to both save and load can be assumed unless otherwise noted:

MAX/RLE.....IAP, GP, MP

TI
ARTIST.....TIAP,TIAF,TIAS,TIAI,DAB1,DAB2,DP,G
P
GRAPHX.....GC,GP
CSGD 1 AND 2.....CP,CF,CG
CSGD 3.....CF,CG,CH,CL and LOAD ONLY CD.
PICASSO.....PP,PI,PF,TIAP
Can also LOAD a TI Writer text file.
JOYPAINT.....JP
JOYPAINT PAL 2...JP,TIAP,JC
Can also LOAD GP,DP

GRAPHICS UTILITIES including external (eg separately loaded) conversion routines on main graphics disks. Where more than one type is listed in the above section, conversions are possible as part of the main program, which is usually much faster.

THE PRINTERS APPRENTICE... Uses its own picture and font formats, can also use TIAP.

TPA TOOLBOX.....Uses TPA fonts and graphics, plus can convert into TPA format the following: TIAI,TIAF,TIAP,CF

PRINT WIZARD.....Creates its own format from TIAI and TIAF

FONT WRITER 2.....Uses, in various utilities, TIAF,TIAI,TIAP,CF,CG,GP

CAN CONVERT: CG to TIAI, CP to TIAI, TIAI to CG and TIAI to CP.

PICASSO can convert an XB font to PF, or load a PF into an XB program. convert BP to PP. Make use of CF and CG files.

CSGD 1 can convert an XB screen into CP.

ARTIST EXTRAS (Texaments) can convert: CF or CD to TIAF, CG to TIAI, and CP to TIAI.

ARTCONVERT (Trio+) can convert TIAI and TIAF to TI Writer graphics.

ARTIST ENLARGER(Asgard) works with TIAF and TIAI. GRAPHICS EXPANDER AND BIGTYPE (Genial) works with TIAF,TIAP, and TIAI. JBM103 (Disk library) enables graphics to be loaded/saved to/from Extended Basic bit-mapped screens in TIAP format.

UTIL12 (Disk library) has a utility to convert from TIAI to Extended Basic program format- merge file, or listing to disk or printer. UTIL 7 (Disk Library) has a utility to convert TIAI to TI Writer graphics.

UTIL17 (Disk library) has a utility to convert a segment (5x5 chars) of a GP CG, and a utility to convert CG to TIAI and/or Extended Basic merge file.

The de facto standard has been set by TI ARTIST- only graphics programs released before TI Arist lack TIA capabilities, apart from CSGD, although external utilities have been created to remedy that!

As far as PRINTERs go, all these work with EPSON FX series printers or any printer which follows Epson commands- the usual commands used are:

ESC * (8 pin bit image mode)
ESC K (480 DOT 8 PIN mode)
ESC L (960 dot 8 pin)
ESC Z (1920 dot 8 pin)
ESC A n (Line spacing in n/72 inch)
ESC l n (Left margin setting)

A few programs allow GEMINI printers to be used, but Gemini used two incompatible codings in their printers, and Gemini owners often report problems. A very few programs will support other printer codings.

END OF ARTICLE

SECTOR SHARING.

By Mark Shafer
Bluegrass 99 Computer Society Inc.

Retyped by S Shaw.

[This is a complex but unusual article, addressing an odd problem in an odd way. Lateral thinking isn't in it.... sjs]

They say necessity is the mother of invention. And in this case, I'm the father. I think I've discovered something you'll find intriguing. Take a look at the following disk catalogue:

```
DSK1 - DISKNAME= FNWEB/4*1  AVAILABLE=117
USED= 241 FILENAME  SIZE   TYPE  P
AS        33 PROGRAM
AT        22 PROGRAM
CF        31 PROGRAM
CG        25 PROGRAM
D1        33 PROGRAM
D2        33 PROGRAM
D3        29 PROGRAM
DU        33 PROGRAM
DV        33 PROGRAM
DW        29 PROGRAM
LOAD      31 PROGRAM
```

If you don't notice anything strange, add up the sizes of the files and compare that to the number of sectors used. How did I do that? Why did I do that? That's what I'm here to tell you. What I've done is to make it so that some files take up the same space as other files, which is the concept I call sector-sharing. First, let's get into why I did it. I have Disk Utilities by John Birdwell. One of its features is the ability to change to default system setup. The trouble was sometimes I will want the defaults to be one way and sometimes I will want them another. Now, I could change the setup in the program when I need to, but this is some trouble. The ideal solution would be to have two (or more) copies of the program on the disk, and boot the one with the defaults I want at the time. But I only have one SSSD disk drive, so I clearly don't have the room to do this if I want to add to the above disk the Funlweb files CHARA1, EA,ED, EE,QD, SL,SYSCON and UL! Just like limited memory can lead to tight coding, limited disk space can lead to creative disk utilisation. All I wanted to do was to change the first sector. So I got the idea to create a file that would have a different first sector, but share the rest of the sectors with the original file! The steps to do this, I believe, can be done in any order. Basically it goes like this: creating the new header sectors, creating the modified sector, updating the disk catalogue, marking the used sectors, and renaming the new files. The beaty is that Disk Utilities itself can handle all of the above in one session, but I suppose any sector editor and disk manager will do. So let's create the new header sectors first. Each file on a disk has to have a sector that identifies the type of file it is and where it is on the disk. The first step here is to find out what sectors are free. One way to do this is to look at sector 0 starting at byte >38, look for non-F's, and figure out what sectors correspond to the blank bits. Or you could use Disk Utilities to print the disk report and figure out what sectors are contained in no file. In my case, sectors >13 to >16 were available. You could put them anywhere, but the normal thing is to put header sectors in the >02 to >21 range. Next I need to know where on the disk the files I'm going to "copy" are, as well as where their header sectors are. The disk report has this information. So now you edit the header sector of these files. So to the first one first. You need to change two things on it. Change the name to something that would fall at the end of the disk catalogue. This way we don't have to insert when we change sector >1. I called my new files ZX,ZY, and ZZ.

For the file that has the modified sector, you need to change the segments starting at byte >1C. Insert three bytes at this point. This may be a little more difficult with some sector editors. Put in the following three bytes at >1C: yz 0x 00 where xyz is the sector we're going to create in step 2. In my case it was >16 so I inserted 16 00 00. Then add one to the next byte. so if it's >57, make it >58. This process makes it so this file is in the same place as the original file except its first sector is different. If you're changing a sector in the middle, this is a bit more difficult. When you save it back, put it at the first available sector you found. For the remaining header sectors, I just simpley changed their names and saved them to the next available sectors since they are to share exactly the same sectors. Once you've got that done, the rest of it is a cinch. To create the modified sector, simply edit the sector you wish to change, make the appropriate changes, and save it to the free sector you indicated at step one (eg >16 in my case). Normally the sectors contained in a file are higher than >21 but I didn't have any free in that area. Next it's time to change the disk catalogue at sector 1. Simply put the header sectors you created at step one at the first available 0000 in sector one. I appended 0013 0014 0015 to add my three new files. The next step is to tell the disk what sectors we've used. With Disk Utilities, you just use the Mark Sector feature. With others, you may have to figure out what bits they correspond to in sector 0 and make the changes yourself. The last step is to rename the new files what you really want to call them. I called mine D1,D2, and D3. The last bytes have to be consecutive so that they load as one continuous program. After this, I had to configure Funlweb to be able to load my new program. So now, when I run Disk Utilities, I have the choice of the options in DU or the options in D1. They both load just fine.

But there are some consequences. There's the problem of copying. If you try to copy a sector-sharing disk by file, the duplicate will unshare them! Also, you may get an out-of-space error. So to copy such a disk you should use a sector [or track-sjs] copier. Then there's the problem of what happens if you want to copy the sector sharing files but not the whole disk- if you can't do a direct copy sector x to sector x, I would recommend that you find a way to sector copy the whole disk, and delete the files you didn't want. Or you could copy only one of them and start the

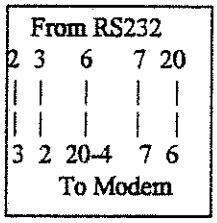
operation over again on the new disk. So to make a copy of this 95 sector program, it took only four additional sectors! Three for each new header sector, and one for the modified sector. Shorter files would need even fewer additional sectors. I could go on and make another version of this program, but I think I'm happy with just two. I wonder if I have any other files I can do this to...
[[Disk Utilities is available from the User Group library. If you can follow this by no means simple article you will quickly learn how to use Disk Utilities - which does have simpler applications - and you will certainly learn very effectively how your disk system works- we have already covered sector layouts in previous issues, this article really hammers it all home! sjs]]

END OF ARTICLE

FROM THE BBS

MAIL TO : ALL
MAIL FROM : LARRY

Intelligent modem setup



For those with TELCO setup the AUTO DIALER three times for BBS one at 300, one at 1200 and one at 2400. When you use the auto-Dialer it will change TELCO to the rating that the AUTODIALER is set to for the program number. for e.g.
1 TIshug BBS 300
2 TIshug BBS 1200
3 TIshug BBS 2400
If you select 1 the smart modem will connect you at 300 If you select 2 it will connect at 1200 If you select 3 it will connect at 2400
One other thing with telco if any problems with dialing put the phone number as ATDP4564606
ALSO found with MENU 7.35 a quick way of turning it off just press Q

Bye for now LARRY.

END OF ARTICLE

HANDY HINTS

by **Ross Mudie**,.

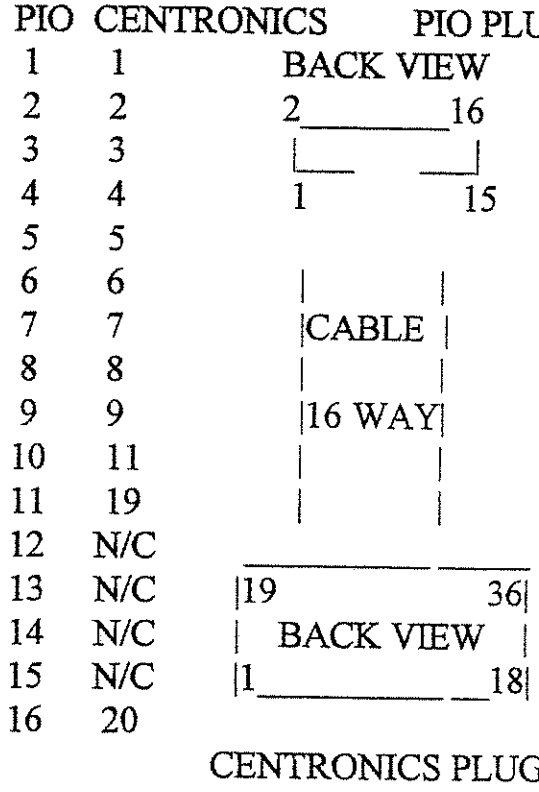
This file contains:

1. PIO cable configuration.
2. Use of lower case "dsk" for AT disk controller.

---

1. TI99/4A PIO to CENTRONICS CABLE

PIO	CENTRONICS
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	11
11	19
12	N/C
13	N/C
14	N/C
15	N/C
16	20



Note: N/C connections are cut off at centronics plug.

2. Use of Lower Case "dsk" for AT Disk Controller.

When using a Peter Schubert Disk Controller, use of upper case "DSK" or lower case "dsk" are both valid to access a disk drive. When a ram disk has been set to a disk drive number by the CALL DN(x) statement the ram disk will then respond to any upper case DSKx reference making the only way to access the physical disk drive on the same number by reference to the disk name, e.g., "DSK.DISKNAME.FILENAME". When using an AT controller it is possible to access the physical disk drive number with lower case "dsk", e.g., "dsk1.FILENAME". I find this feature very handy when I have the ram disk set to drive 1 and I want to easily access a disk in the physical drive which is also set to drive 1.

END OF ARTICLE

THE BEST FRUITCAKE EVER

Ingredients:
1 cup sugar, 1 cup butter, 4 large eggs, 1 tsp. baking powder, 1 tsp. baking soda, 1 tsp. salt, lemon juice, 1 cup brown sugar, 2 cups dried fruits, 1 or 2 bottles whisky.

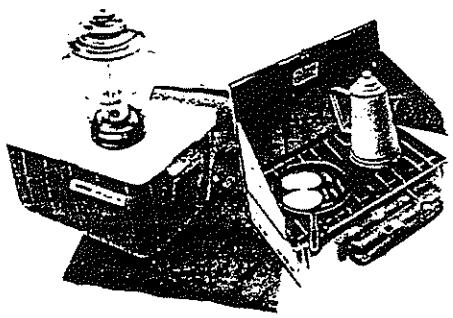
Befor you start, sample the whisky to check for quality, good isn't it?

Now go ahead and select a large bowl, measuring cup etc. check the whisky again, as it must be right. To be sure the whisky is of the highest quality, pour 1 level cup into a glass and drink it as fast as you can, savour the feeling. With an electric mixer beat 1 cup butter in a large fluffy bowl, and add 1 tsp. sugar and beat again.

Meantime, make sure the whisky is as good as it was at first. Try another cup. Open the second bottle if neshessary, add 2 large eggs, 2 cups fried druit and beat till high, sample the whisky again to check for consh, conshish, conshisntenshy.

Next sift 3 cups salt - or any thing it really doesn't matter. Check the whisky, grind half a pint lemon juice, fold in chopped butter and strained nuts. add one bablespoon of brown sugar or any old other colour you can find, mix well. Grease the oven and turn the cake pand to 350 gredees. Pour the lot into the emply bisky wottle, stir into the boven and ake. Winnish the frisky and ball into fred (oops I mean fall into fred, ahh bed!!!)

ED. Comments I haven't tried this recipe yet.
With thanks to the NSW Masters Squash Associatin
The Official Newsletter "OLD NICKERS NOTES"



ASSEMBLY LANGUAGE

VIDEO MODES

By Jim Ness

Way back when the TI99/4A computer was designed, it was understood that a low buck computer had to provide entertainment as much, or more than, computing power. So it was necessary for such a machine to have decent colour graphics capability, as well as math and text handling capabilities.

TI's response to this was the TMS9929 video display processor. This chip has the ability to display text in 8 x 8 dot size or 8 x 6 dot size (32 column vs. 40 column), or non-text graphics using 4 x 4 dot squares (multi-colour mode), or even single dot graphics (bit-map mode).

This video display processor (VDP) mode is set by an 8-bit register in the processor itself. There is no access to this register from TI-Basic or Xbasic, but you can set it from TI-Forth, Pascal and Assembly Language.

GRAPHICS MODE

The default upon power-up of the computer is Graphics mode, which is the 32 column mode we are all familiar with from Basic. In this mode the processor keeps track of 768 squares. each of them an 8x8 dot matrix. There are 256 possible configurations of each of these squares, with the information on each configuration stored in VDP Ram. The standard TI99/4A chars are loaded upon start up of the machine (Basic only allows characters 32 through 159 to be tampered with).

Another section of VDP Ram stores which character is currently in each of the 768 squares. And a third section keeps track of which colour each character configuration is supposed to be. Colours in Graphics mode are assigned to configurations in groups of 16 consecutive character numbers. Graphics mode does not set enough Ram aside to let you set each character to a particular colour. Remember that your Basic program is stored in VDP Ram, so the processor has to leave 16k of VDP ram open for that.

TEXT MODE

nois the mode used for text-based programs such as the Terminal Emulator, TI-Writer, Editor/Assembler, and some of the Adventure games. Use of the VDP Ram is similar to Graphics mode, except that since there are 24 lines of 40 columns, there are now 960 8x6 dot squares on the screen. Keeping track of almost 200 extra positions in VDP Ram uses up space normally used to keep track of colour sets in Graphics mode. That fact, plus the fact that colours are not as important in text programs, limits your colour choices to just picking foreground and background colours to be used for all characters.

=> CHAPTER 2 <=

In the first chapter of this earthshaking expose, I explained some of the ins and outs of the Graphics and Text modes of the 9929 VDP processor.

Graphics mode gives you 24 columns of 32 characters each, with control of the screen and char colours (16 char sets can be separate colours). In text mode, you get 24 columns of 40 chars each, with control of screen colour and a single choice for character colour.

In this chapter we move on to the other two selections, Multi-colour mode and Bit mode.

First though, we should talk a little bit about use of the VDP memory. VDP ram consists of 16k of memory, with the beginning used by the VDP for screen functions, and the rest used for temporary storage for peripherals, and, if you don't have memory expansion, for your Basic or Xbasic program. Each graphics mode uses the ram a little differently than each of the others.

In Graphics and Multicolour modes, the first 768 bytes are used for storing the characters currently at each screen position. In Text mode, the first 960 bytes perform this function, and in Bit Map mode, the second block, starting at byte 6144, and 768 bytes long, does this.

Other sections are the colour table, which keeps track of char colours (not used in text mode, 32 bytes long in Graphics and Multicolour mode, and *6k* bytes long in Bit Map mode), pattern descriptor table, which keeps track of the shapes of the chars (2k bytes in all modes except Bit Mode, which uses 6k bytes for this function), and the sprite table (unused for Text mode, about 128 bytes in other modes). As you can see, Bit mode just about uses the entire 16k of VDP ram to store its information. As you can also see, it would take a *LOT* of work, many hours, to properly set up VDP ram for a Bit mode program.

In Multicolour mode, you have control of 48 rows of 68 blocks, which can be any colour from transparent to white, but can only be blocks, no special shapes. The idea is to build large multicolour shapes from these blocks (1/4 the size of the normal Graphics mode characters).

Sprites are available, also. A game like Munchman would be done in this mode.

In Bit Map mode, you have control of 24 rows of 32 columns, **BUT** , each of the 768 boxes can be independently configured. You are not limited to just a couple hundred, as in Basic. Also, each box can have as many as *16* colours attributed to it. In other words, the end result is that you have almost ultimate control over each pixel on the screen. The only limitation is that in any 8-pixel row in any character, you can only have 2 colours. Not a big problem.

What is a big problem, is, who has the time, just playing around, to write data configuring this much ram? We are talking about 15k of ram, just to start the program. The other one k or so is left for you to use as you please. The time factor is why you see very little on the market with fancy Bit mode graphics. If a software house is going to put all this time into developing something, they have to know there will be a profit somewhere down the line.

Well, that is it for this chapter. I had planned to finish it with 2, but instead, I will expand it to 3, with the final chapter explaining some of the programming necessary to use the VDP processor.

=> CHAPTER 3 <=

We have already discussed the various modes available with the 9929 video processor. They include Graphics mode, Text mode, Multicolour Mode, and Bit-Map mode. In this concluding chapter, we'll see how the TI99/4A CPU communicates with the VDP.

There are 4 8-bit registers set aside in the Scratchpad Ram, for access to the VDP. Numbers placed into these registers in the proper manner are transferred to and from the CPU and VDP. These registers are the VDP Write Address Register, the VDP Read Data Register, the VDP Write Data Register, and the VDP Read Status Register.

The Write Address Register is used to specify to the VDP which address you are going to write to or read from. Once a number is placed properly in this register, the data currently in that address pops up in the Read Data Register for your use. Since it is an 8-bit register, and we are dealing with 16-bit addresses, only half the address is written at a time, the last byte, pause, and then the first byte. The address in question in the VDP Ram will hold a byte of info, so the data will appears in the Read Register as a whole.

The Write Data Register specifies the data that you want to have written into VDP Ram. Again, you are writing a byte of info, so the whole thing fits into the 8-bit Register. Only the address is 16-bit, so only the Write Address Register is written to twice.

The reason there has to be a pause in sending the address to the VDP is that the two processors march to a different drummer. The CPU runs at about 3MHZ and the VDP at about 1MHZ. The result is that you have to slow your assy lang program down for a moment to be sure that the VDP catches the two byte address you are sending.

The Read Status Register contains some status info about the VDP, including coincidence of sprites and too many sprites on a single line.

By using these registers, you can put any info on the screen, byte by byte, set up the VDP for sprites, or bit-map graphics, etc. But TI has written some sub-routines into the E/A, Xb, and MMM carts that can be referred to in assy lang programs. These subroutines make access to the VDP even easier, and almost all programmers use them. The only problem is that the subroutines are not accessed the same for each cart, so if you use them, you have to write them for either the E/A and MMM, or for the XB cart.

These subroutines include VMBW, which is VDP Multiple Byte Write, VMBR (Read), VSBW (Single Byte Write), VSBR (Read), and VWTR (Write to Register).

In each case, you put the required info into workspace registers, and then branch to the appropriate sub-routine. Presto-chango, your data is transferred.

For instance, if you have no shortage of memory space, you could set aside 736 bytes for screen scrolling. You would transfer screen lines 2 thru 24 to this space in CPU Ram, and immediately transfer it back to VDP Ram, but place it into lines 1 thru 23, and then blank out line 24. Like this:

```
* SCROLL SUBROUTINE              *
     DEF  SCROLL
     REF  VMBR,VMBR
TEMP  BSS  736
BLANKS TEXT '    <32 SPACES>
SCROLL LI  R0,32
     LI   R1,TEMP
     LI   R2,736
     BLWP @VMBR
     CLR  R0
     BLWP @VMBW
     LI   R0,736
     LI   R1,BLANKS
     LI   R2,32
     BLWP @VMBW
     RT
     END
```

If this routine were assembled and loaded into a Basic pgm, you could have a CALL LINK("SCROLL") statement that would scroll the screen. Of course, you wouldn't go to all that work, because a PRINT statement does the same thing, just a little slower.

END OF ARTICLE

Comparison Charts

Based on maximum config of each machine

CPU Machine	VDP RAM (K)	DISK RAM (K)	DRIVES	HARD	YES	MOUSE PORT
TI-99/4A	32	16	4 DS/QD	4 30mb	N	
Myarc 9640	2024	192	4 DS/QD	4 30mb	Y	
IBM PC	640	64	2 DS/DD	2 30mb	N	
Atari ST	520	960	64 2 DS/DD	1 40mb	Y	1040
960	64	2 DS/DD	1 40mb			
Apple 512						
MAC	448	64	2 DS/DD	1 80mb	Y	
PLUS	4032	64	2 DS/QD	1 80mb	Y	
Amiga	896	128	2 DS/QD	1 80mb	Y	

Note: 1 DS/DD Drive=360k 1 DS/QD Drive=720k

Machine	Video	Keybrd	RS232	PIO	1000 Fixed?	Machine Ports	Outpu $$
TI-99/4A	Compos	Y	4	2	.4		RF Mod
Myarc 9640	Compos	N (any IBM)	NO LIMIT	NO LIMIT	1.1		RGB
IBM PC	TTL	N	2	1	2.0		RGB
Atari ST	520	RGB/MON	Y	1	1	1.2	1040
RGB/MON	Y	1	1	1.5			
Apple 512	MONO	Y	2	1	2.0		
MAC	ONLY						
Apple Mac	MONO	Y	2	2	4.5		
PLUS	ONLY						
Amiga	RGB/MON	Y	1	2	2.2		

Machine	Low Res Colors	High Res Colors
TI-99/4A	32x24 16	246x192 16
Myarc 9640	256 256x192 (512)	512x424 16
IBM PC	160x100 16	320x200 4
Atari ST	64	640x400 2 All 320X200 (512)
Apple MAC	All	512X384 2 512x384 2
AMIGA	320X200 64	640x200 16 (4096)

Note:Number in () is total Pallette

Machine	Text	Output Type	Qual
TI-99/4A	40x24	2/3	Compos Color
Myarc 9640	80x50	3/4	Compos Color RGB color/mono
IBM PC	80x25	2/3	TTL RGB color/mono
Atari ST All	80x48	3/4	Only Atari Monitors
Apple MAC	All	80x26	4 Built in
AMIGA	80x25	1	RGB Color/ mono

Output Ratings
1-Poor 2-Good 3-Very good 4-Excellant

This file was supplied for TEXPAC BBS by Shane Ferret.

END OF ARTICLE

Looking Back

(Illawarra TI-99/4A Reunion - November 1995)

by R.A.Montgomery□

My affair with the TI-99/4A computer began in August 1983. I had paid full price ($650) only to see it drop to less than $300 two weeks later. TI had pulled out of the home computer market. The management of Shop 4 Home Computers were the local agents and were keen to sell as much discounted product as they could. Barbara Atkins organised a local users meeting late in 1983. I attended the meeting and didn't know a soul.

However, Sue, my wife, thought she recognised a person up the back. It turned out to be Rolf Schreiber and introduced him to me. What a fateful day, somehow or other we became the committee for the local user group. Later in the year I joined TIsHUG. Regular meetings were held in 1984, at the shop, with the first newsletter published in May. I remember debating with a couple of blokes who stood at the back of the meeting. They were Lou Amadio and Geoff Trott. Both became committed to having a TI group in Illawarra. Newsletters were printed by Rolf as he had most of the equipment. Right from the start it was realised that a library of programs and books was essential. Fees were set and the funds used for the library.

The group's charter was to be a regional group of TIsHUG so that it could benefit t from that organisation. Local members were encouraged to join. Not many did. In those days it seemed that people bought computers not knowing quite what to do with them. It was a great novelty in having a computer. While most computers ere used to play games the focus of the local group was to encourage people to learn BASIC programming. Later the enthusiasts (Rolf, Lou, Geoff and George) got into assembly language and then hardware for the computer.

In 1985, meetings were held in a church hall, partly because Shop 4 was moving and partly to allow the meeting to have more area. While there had been some tutorials in the shop the hall was better as audio visual equipment was available. Tutorials for BASIC, Extended BASIC, Assembler language and programming were often given. Word processing often came up as an item in the newsletter. By mid '85 George had worked out how to remove the protection from cassette tape programs. This would eventually lead him into the area of downloading module programs onto tape and running in Extended BASIC.

While there was always a technical side to the local group the committee always tried to involve the family. Barbecues and Christmas parties were organised on regular basis.

By now some were spending too much time on the computer. What the heck, we were hooked. Geoff was getting articles published in the TISHUG newsletter. We were starting to make our presence felt in Sydney. We weren't too happy about the way the Sydney group was run. 1986 promised much of the same as the previous year. Club membership had peaked to about 60 members. The TI was really an orphan and the non technical programs, modules and books

Around mid year Geoff had demonstrated his computer diagnostic device. It became a hit with the techo's in Sydney and opened the door for us. Some months previously we had written a critical letter with constructive suggestion to the executives. It was not well received.

One weekend Geoff demonstrated his device, over at the Uni, to several Sydney members. During the day a plot was developed to influence the Sydney executives. We would take over their newsletter and maybe the software library (Rolf was after that).February 1987 saw the newsletter editorship come to Wollongong. The software would have to wait.

The newsletter was redesigned. In the first issue a gremlin got into the Sydney coordinator's copy and the front cover depicted the Wollongong take-over. He was not impressed. It didn't appear in any other copy, very strange. Much effort was put into the newsletter and it became one of the best club magazines in the world. Production costs were cut by about half.

At the end of the year I didn't renew my TIsHUG membership and GEOFF became the new editor. I remained a member of the local group for another year before I tired of using an orphan computer.

What has happened to it? Well, it still sits in the same spot as it has for the past 10 years and occasionally it is run. Some program will not run or will not load.

It is hard to believe that 10 years ago we were happy with a 32K and 16 colour machine. Today you can buy an 8 Meg RAM, 520 Meg hard disk with multimedia for an equivalent price taking into account inflation.

Yes, I remember it well.

END OF ARTICLE

NEWSLETTER ROUNDUP
TI REUNION

ILLAWARRA TI-99/4A USER GROUP

By Lou Amadio

Most TI users bought their consoles between October and December 1983. User groups started up late 1983 to early 1984. There were three local TI groups totalling approximately 75 members:

The AIS TI User Group
The Lysaght TI User Group
The Illawarra TI User Group

The following comments apply to newsletters from the AIS and Illawarra groups. To my knowledge, the Lysaght group did not produce a newsletter.

AIS: March 1984
Looking for volunteers to type in BASIC programs from magazines. Software shortage forecast. Stan Hajduk built a PPM to assist in loading cassette programs. The GREAT PARSEC COMPETITION announced. Due to high cost, module sharing proposed by John Mazzieri.

AIS: May 1984
Werner Kanitz was already writing BASIC programs. Meetings announced for Corrimal (Shop 4). Programmers hot Line: 11621 (Dial a Prayer). Great rejoicing when Imagic took over distribution of TI software even if prices were too high.

AIS: June 1984
Hot news was availability of cheap cassette player from markets. Now we could get serious! Hardware projects started to appear. This was to be one of the great strengths of the TI user groups. 10 members were interested in sharing one printer! Information hunger led to subscriptions to Home Computer magazine and Compute!

AIS: July 1984
Shop 4 discounts TI software and hardware. Wondering when commercial software would run out. XB, TE2 and TOD cartridges still available.

AIS: August 1984
Werner Kanitz programs new (steel city) logo for club newsletter.

AIS: September 1984
Club had 27 cassettes available for borrowing. Lou Amadio suggests that the AIS, Lysaght and Illawarra groups combine to form one large club. Illawarra group announced tutorial classes. Uni Coop bookshop had a 1/2 price book sale. Bare disk drives (no controller or PEB) were available for only $180 each!

AIS: November 1984
Last AIS newsletter. 9 for 1 program offer - poor response from members.

IUG: May 1984
Coordinator - Bob Montgomery. 50 cents per week to hire tapes for club members. Non TISHUG members had to pay $2.50 per tape!

IUG: July 1984
Rolf Schreiber new coordinator. TISHUGI name for club rejected (thank goodness!). Flyer on cassette handling. How to get a sharper TV picture with the TI-99/4A. Inner workings of console explained.

IUG: August 1984
New XB word processor (TEXSCRIBE) was a boon for cassette only users.

IUG: September 1984
LA new coordinator. Membership questionnaire. Bob Montgomery tries to instil his love of programming into club members.

IUG: October 1984
2 members purchased floppy drives (15 times faster than cassettes). Geoff Trott started assembler tutorials - all he needed was clever students! Disk controllers (no PEB) were selling for $250. Speech Synthesisers were $150.

IUG: November 1984
Half day tutorial on speech, sprites, sounds and print. Explanation of Assembler by (GWT?). How to adapt non-TI joysticks.

IUG: February 1985
Geoff Trott joins committee. Shop 4 moves to Wollongong. Meetings transferred to St Mathews Church Hall, Mangerton. Fourth PC show announced. Club offered over 1500 programs as well as books and magazines. Article on the LOGO programming language (suits ages 8 to 88).

IUG: March 1985
Module library established (still exists). Regional groups on their own (re TISHUG). Article on PLATO educational software.

IUG: April 1985
Club member purchases 300 baud modem! More XB tutorials. Information on how to operate a cassette data recorder.

IUG: May 1985
Article on graphics and character redefinition (one of the TI's great strengths).

IUG: June 1985
Hardware development announced. Theory of computer workings by Geoff Trott. Editing tips for BASIC. Importance of cassette head azimuth for reliable program loading. Joystick modification by Harl Davis to improve response with Parsec and Munchman

IUG: July 1985
BASIC "DEF" explained. Interfacing to the RS232/PIO card by Geoff Trott. Article on structured programming by Bob Montgomery.

IUG: August 1985
Most important function of year announced - a family picnic! Focus on music: tutorial by RAM; Music Maker review by GWT. Comprehensive tests and advice on the best tapes to use for recording programs by Harl Davis.

IUG: September 1985
Focus on word processing: Using XB as a word processor by Harl Geoff.

IUG: October 1985
Using the TI-Writer Formatter by Geoff Trott. Review on the versatile Mini Memory module. George Meldrum's "one eyed" advice on removing protection from cassette tapes.

IUG: November 1985
Annual picnic rained out! Multi cartridge expander developed. Mod to allow cassette recorders to be controlled by the console. Article on FORTH language by GWT. Various memory types found in the console and the PEB explained by GWT.

IUG: December 1985
32K memory expansion available for console for $75 (Courtesy RS and GWT). How to use the 32K memory with XB, E/A and MM by Rolf Schreiber.

IUG: February 1986
Hardware development update and using Millers Graphics EXPLORER to peek into the inner working of the console by GWT. Notes on CALL SOUND.

IUG: March 1986
New modules, cassettes, disks and books released. Varies programming tips and software reviews.

IUG: April 1986
Special feature on word processing using Console Writer, XB plus program or XB plus console. RAM introduces programming music.

IUG: May 1986
Saving partial program code by RS. More music by RAM. An explanation of his famous Console Tester by GWT.

IUG: June 1986
New software and reading material continues to pour in thanks to Rolf. "TI the great deceiver" by George Meldrum on how the console stores and uses characters. Little and Big Endians by GWT - facts on the order of bits and addresses.

IUG: July 1986
GM on the intricasies of INIT, LOAD and LINK. RAM returns to music. LA on TIW printer control codes. RS on disabling a disk drive. GWT on LOGO programming.

IUG: August 1986
New word Processor "RAM Writer V2.0" announced by Rolf. TI-Writer tips by LA. Club acquired TI LOGO package.

IUG: September 1986
RAMdisk cards announced. General programming tips and software reviews.

IUG: October 1986
GWT's console tester "hits the street". Music programming by RAM. Converting text to BASIC by LA.

IUG: November 1986
Club 3 years old. Fabulous Gram Kracker module demonstrated by John Paine of TISHUG. Allowed downloading of any module to disk. RAM cards explained. The random number generator by GWT.

IUG: December 1986
Club fees reduced for coming year! More 32K software released by George Meldrum. Rolf makes a takeover bid of TISHUG. LA has a working RAMdisk at last.

IUG: February 1987
Bob Montgomery becomes editor of TND. TISHUG is 500 strong and affiliated with 20 other clubs worldwide. Orders taken for RAMdisks. RS232 and 32K projects at an advanced stage. More 32K cassette software from George. GWT shares his trials on repairing dead consoles. Article on the "Super Computer" with 110K of memory. More book reviews from Rolf. This was the one and only newsletter for 1987 due to commitments to TISHUG

IUG February 1988
GWT becomes editor of TND. RAM returns to BASIC tutorials. RS and Phil Thomson set up TIs at the local school. GWT tells of encounters with User Groups in UK and the USA and brings home a Geneve for Rolf. 32K - the most important add on for the TI by LA.

IUG: March 1988
GM makes "MERGE" available to cassette users. Speech in BASIC by RAM. Article on graphics programs by Phil Thomson. "I'm weak, got no control" by Anonymous (Werner Kanitz).

IUG: April 1988
RAM writes on user defined subprograms, Parsec strategy revealed. GM on CALL LOAD ("CS!") advances the cassette user into the TI stratosphere! Using Picasso by Phill Thomson.

IUG May 1988
RAM comes to the rescue with a timely article on BASIC subprograms. Werner Kanitz gets excited over being able to read and write (files). Very funny

IUG June 1998
RS was to demonstrate the Geneve. SPAD flight simulator for the TI announced (Microsoft takes note).

IUG: July 1988
Springlike weather appreciated! GM advances cassettes further by decreasing load/save times (aim was to make disk drives redundant). LA uses PRBASE to create a telephone directory (still in use). RAM with more on subprograms.

IUG: August 1988
RAM on using prescan to speed up XB execution. WK was back with (RAM)Card Games - a must read. Changing default colours in XB.

IUG: September 1988
GWT/LA build supermodule with Editor Assembler, Mini memory an 4 banks of 32Kb RAM. RAMdisks progress to 384K using 32Kb chips. Multifont printer control program described. Using control codes to change printer fonts.

IUG: October 1988
Club acquires speech synthesiser. RS - compiled BASIC runs 60 times faster! GWT/LA fit 64K memory into console. Creating special characters for printers by LA.

IUG: April 1989
Werner Kanitz editor. How to use both sides of a disk with a single sided drive. BASIC and TI-Writer tips from abroad

IUG May 1989
Impact of the IBM PC was finally felt with "Transfering files between the 4A and Pcs without a modem"

This was the end of the Illawarra Users Group Newsletter. GWT, RS and LA had been busy writing articles for the TND since 1988.

END OF ARTICLE

JUST A ONE LINER (ED)

Waiter: "How did you find your steak Sir?"
Diner: "Quite by accident, I moved a few peas and there it was."

SPEECH V1.0
E.P REBEL 05-03-1987

This file contains documentation and assembly source file. The remarks in the source file are in Dutch but this does not detract from the fact that it is an excellent assembly speech programming example.

****
* SPEECH V1.0 *
****
* E.P REBEL 05-03-1987 *
****

PROGRAM PURPOSE:
SPEECH V1.0 is a program to test the contents of the ROMs in your speech synthesizer. It will speak every word contained in the ROMs.

USING THE PROGRAM:
LOAD AND RUN the program from MINIMEM or EDITOR/ASSEMBLER module. The start name of it will be displayed automatically so you have only press <ENTER> twice to start the program. All the words SPEECH V1.0 finds, will be displayed on the screen and spoken by the synthesizer. Press <QUIT> to end the program.

ABOUT THE SOURCE:
I'm sorry but the comments to the source are in Dutch. This program was written for the Dutch Users Group Newsletter. Feel free to change the source and make the program better.

PUBLIC DOMAIN, FREEWARE OR WHAT-SOEVER.
This program may be duplicated in any form without notice of the author. You may distribute it via your users group or give it away to your friends. But please pass along the source and this documentation too. If you like the program do not send me $10.00 (although I wouldn't mind) but send me a program of your own that I can distribute via the Dutch users group. Thank you.

THE AUTHORS NAME AND ADDRESS:
SPEECH V1.0 and this documentation were written by:
Eric-Paul Rebel
Merelstraat 27
1223 NR HILVERSUM
The Netherlands
Phone: 31-35832929

Don't ring me up when you don't speak Dutch and live in another continent because the time in Hilversum is different and my English, Spanish and Japanese are BAD! My apologies for the bad English but I suppose you prefer it over the Dutch version.

****
* SPEECH *
****
* E.P. REBEL *
* 05-03-1987 *

```
      DEF SPEECH
      REF VMBW,VMBR
      REF SPCHRD,SPCHWT

      DORG >8300
WORKSP BSS >0020                    workspace
READIT BSS >000C                    ruimte voor deel
programma code
SPEAK EQU $

      RORG
SPEECH LWPI WORKSP                  gebruik snelle
registers
      BL @INIT                      verplaats code naar sne geheugen
LOOP  CLR R15                       stack nivo
      CLR R4                        speech rom adres >00000
      BL @LOAD                      laad speech rom adres
      BL @GETBYT                    lees eerste byte uit speech rom
      CB @HAA,R3                    geldig rom aanwezig?
      JNE ERROR                     nee->stop
      BL @SUB                       lees binaire boom uit
      BL @WAIT                      wacht een tijdje
      JMP LOOP                      begin opnieuw

ERROR BLWP @0                       fout->reset texy

SUB   MOV R11,@STACK(R15)           bewaar terugkeer
adres op stack
      INCT R15                      verhoog stack nivo
      MOV R15,R2                    bepaal string ruimte
      SLA R2,4                      *16
      AI R2,NAMES
      BL @GETBYT                    haal byte uit speech rom
      MOVB R3,*R2+                  dit is de lengte van
woord/zin
      JEQ NAMEOK                    lengte 0 mag eigenlijk niet
voorkomen
      MOV R3,R4
      SRL R4,8                      lengte in lsb
NAMGET BL @GETBYT                   haal byte uit
speech rom
      MOVB R3,*R2+                  vorm woord of zin
      DEC R4                        alle bytes gehad?
      JNE NAMGET
NAMEOK BL @GETBYT                   haal byte uit
speech rom
      MOVB R3,@LOW(R15)             msb van less than
pointer
      BL @GETBYT                    haal byte uit speech rom
      MOVB R3,@LOW+1(R15)           lsb van less than
pointer
      BL @GETBYT                    haal byte uit speech rom
      MOVB R3,@HIGH(R15)            msb van greater than
pointer
      BL @GETBYT                    haal byte uit speech rom
      MOVB R3,@HIGH+1(R15)          lsb van greater than
pointer
      BL @GETBYT                    haal byte uit speech rom
      JNE ERROR                     nibble 0 moet 0 zijn (rom is 8k)
      BL @GETBYT                    haal byte uit speech rom
      MOVB R3,@ADDR(R15)            nibble 1 en 2 van
spraak data
      BL @GETBYT                    haal byte uit speech rom
      MOVB R3,@ADDR+1(R15)          nibble 3 en 4 van
spraak data
      MOV @LOW(R15),R4              less than pointer
aanwezig?
      JEQ NOLOW
      BL @LOAD                      laad nieuw zoek adres
      BL @SUB                       zoek linker tak van binaire boom
af
NOLOW BL @SCROLL                    scroll
scherm
      LI R0,23*32+2                 scherm positie van onderste
regel
      MOV R15,R1                    bepaal string ruimte
      SLA R1,4                      *16
      AI R1,NAMES
      MOVB *R1+,R2                  haal lengte op
      JEQ PRTOK                     zou eigenlijk nooit 0 mogen
zijn
      SRL R2,8                      lengte in lsb
      BLWP @VMBW                    zet woord/zin op
scherm
PRTOK MOV @ADDR(R15),R4             haal adres van
spraak data op
      BL @LOAD                      laad adres
      BL @SPEAK                     spreek woord/zin uit
      MOV @HIGH(R15),R4             greater than pointer
aanwezig?
      JEQ NOHIGH
      BL @LOAD                      laad nieuw zoek adres
      BL @SUB                       zoek rechter tak van binaire boom
af
NOHIGH DECT R15                     verlaag stack nivo
      MOV @STACK(R15),R11           haal terugkeer
adres op
      RT

INIT  LI R0,READIT                  begin van te verplaatsen
code
      LI R1,CODE                    te verplaatsen programma
code
      LI R2,CLEN                    lengte van code
CODELP MOV *R1+,*R0+                verplaats
code
      DECT R2                       klaar?
      JNE CODELP
      RT

GETBYT MOV R11,R10                  bewaar terugkeer
adres
      MOVB @H10,@SPCHWT             lees byte uit rom
opdracht
      BL @DLY12                     vertraag
      BL @READIT                    lees byte
      B *R10

LOAD  LI R5,5                       vijf nibbles te laden
LOADLP MOV R4,R0                    adres
```

```
    SLA R0,12          verwijder overbodige nibbles
    SRL R0,4           zet nibble op juiste plek
    ORI R0,>4000       maak er de juiste opdracht van
     MOVB R0,@SPCHWT                          laad
opdracht
    SRL R4,4                volgende nibble
    DEC R5                  alle vijf gehad?
    JNE LOADLP
    MOV R11,R10             bewaar terugkeer adres
    BL  @DLY42                   vertraag
    B   *R10

DLY42 LI  R6,10                lange vertraging
DELAY DEC R6
    JNE DELAY
    RT

DLY12 NOP                      korte vertraging
    NOP
    RT

CODE  MOVB @SPCHRD,R3      lees byte van speech
synthesizer
    NOP                        vertraag
    NOP
    NOP
    RT

     MOVB @H50,@SPCHWT  opdracht om rom data
uit te spreken
    MOV R11,R10             bewaar terugkeer adres
    LI  R5,>8000              talk status bit
SPCHLP LIMI 2                      quit?
    LIMI 0
    BL  @READIT                lees status
    COC R5,R3               nog aan het spreken?
    JEQ SPCHLP
    B   *R10

CLEN  EQU $-CODE                   lengte van code

WAIT  LI  R4,4                 buitenste wacht lus
WAITIN CLR R6                    maximale vertraging
WAITLP LIMI 2                      quit?
    LIMI 0
    DEC R6                  binnenste lus klaar?
    JNE WAITLP
    DEC R4                  buitenste lus klaar?
    JNE WAITIN
    RT

SCROLL LI  R0,32           scherm positie van tweede
regel
    LI  R1,BUFFER              scroll buffer adres
    LI  R2,23*32          23 scherm regels te lezen
    BLWP @VMBR                   lees regels
    CLR R0             scherm positie van eerste regel
    LI  R2,24*32          24 scherm regels schrijven
    BLWP @VMBW                 schrijf regels
    RT

H10   BYTE >10                 lees byte opdracht
H50    BYTE >50                 spreek rom data uit
opdracht
HAA   BYTE >AA                 rom identifikatie code
    EVEN

BUFFER BSS 23*32
    TEXT '
    TEXT '
STACK BSS >20                  terugkeer adressen
LOW   BSS >20                less than pointers
HIGH  BSS >20               greater than pointers
ADDR  BSS >20                spraak data adressen
NAMES EQU $                      woorden/zinnen
opslag

DEFPRT LI  R0,10*32+2          program name scherm
positie
    LI  R1,DEFNAM                  program name
    LI  R2,6                  lengte van naam
    BLWP @VMBW                 zet program name op
scherm
    RT

DEFNAM TEXT 'SPEECH'                       program
name

     END  DEFPRT    automatisch program name op
juiste plek

15:43:21 23/09/95; End by 16:32:52
```

END OF ARTICLE

Wanted - TND Back Issues

I am trying to complete my collection of the TIsHUG News Digest from 1984 to 1995. I am missing the following newsletters:

```
     J F M A M J J A S O N D
1984 X X X X X         X X X
1985                X
1986 X X X X X  X X X X X X X
1987 X X X            X
1988 X X X X X X X
1989
1990
1991             X
1992
1993          X X X X X X   X
1994 X X X X X X X X X X
1995               X
```

Please contact Lou Amadio on 042-284906. Or write to me at 71 Walang Ave Figtree 2525 if you can help.

GENEALOGY ANYONE ?.

This article was given to me by Margaret Moore the wife of our Librarian. She is aware of my interest in Genealogy and is also aware of the fact that I am of Italian heritage. So I pass this on to any and all interested parties.

Thomas E. Militello, M.D., 6932 Ctrest Road, Rancho Palos Verdes, CA 90274, USA is now offering a computerized database called "Pursuing Our Italian Names Together" (POINT). In it's first two months, POINT has recruited sixty-five members who have entered over 700 Italian surnames, representing forty Italian provinces of origin. Anyone working on Italian Names can write to POINT giving his or her name and address, the SURNAMES being researched and the Cities or Towns and provinces where the Surname originated, if known. A #12 SASE with 90c postage will obtain a print out of all those who have written, along with a list of the Surnames being researched and a small newsletter called POINTers.

This is the article as given to me. I wrote to Dr. Militello, included the SASE and $1.00 (stamps went up 25c) and received .75 stamps back and new information. The response has been so overwhelming that Dr. Militello can no longer take on the expense of photocopying, mailing etc. As of today he has 315 members who have submitted 3300 surnames. Hence a quartly Newsletter will be printed and circulated every Summer Fall Winter and Spring including all updates. For this and other privileges (you may submit as many surnames as you wish) he must now charge $20.00 p.a. Or you can pay $1 per name searched. If a match is found he will send you the name and the address of it's contributor. If you wish to join contact the good Dr. direct. (Is ROOT beer a drink for genealogists ?) retyped from: * * TOPICS - LA 99ers.

by John Ryan for TEXPAC BBS.

END OF ARTICLE

PUZZLE

This months list of words is based around the subject of " NO COLOUR"

ACHROMATIC	ANAEMIC	ASHEN
BLANCHED	BLEACHED	BLOODLESS
DEATHLY	DINGY	DRAIND
DULL	FADED	FAINT
FALLOW	FLAT	GHOSTLY
HUELESS	LEADEN	NEUTRAL
SICKLY		TONELESS

This puzzle was compiled using Ashley Lynn's program "Word Puzzle which can be ordered through TIsHUG.

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

Find these hidden words

In this puzzle there are (20) words somewhere horizontally, vertically, diagonally even backwards.
GOOD LUCK!

TEXPAC BBS NEWS & BULLETINS

No	NAME	SIZE	No	NAME	SIZE
1	ALSAV/DOC	(21)	2	ALSAVE/S	(20)
3	ANAL/L	(10)	4	ARRAY/S	(38)
5	ASSEMBLY1	(66)	6	ASY_SPRIT	(39)
7	BAS&XBTIP	(37)	8	CALENDAR	(46)
9	CARTRIDGE	(16)	10	CATSXB	(46)
11	CRUTEST/S	(70)	12	C_1	(7)
13	C_2	(5)	14	C_3	(6)
15	DFF/TML/I	(15)	16	DFF/TML/L	(31)
17	ENHAN_BAS	(27)	18	EPROM	(41)
19	GAMEINTCS	(35)	20	GENEALOGY	(10)
21	INFOCOM	(12)	22	JAN/RAM2	(36)
23	LANGUAGE	(37)	24	LOGO	(22)
25	MEM_MAP	(88)	26	MERGE/SRC	(64)
27	MISC/DOCS	(13)	28	PEEKC/S	(8)
29	PEEKV/S	(7)	30	PRINTPICS	(29)
31	REFDEF/S	(95)	32	SEQUENCE	(5)
33	SQUARE/S	(25)	34	SUBPROGS	(24)
35	TIKEYSDOC	(18)	36	TURBO_PAS	(27)
37	XXB/DOCS1	(31)	38	XXB/DOCS2	(18)
39	_LOM	(2)			

These files are put on this BBS for us to read, Ross spends a lot of his time looking after our interest in computers, so if you have any information or files that you think could be of interest please put them on the BBS so we all can share them.

END OF ARTICLE

THE HOME COMPUTER

Can you stand a few more words from the last surviving advocate of the HOME computer?

And what is a HOME computer? It is a computer designed to be used in the home, to do whatever someone might do in the home that can be done better with the aid of a computer.

AND - the HOME computer is designed to be used by a person who has no particular interest in computers, who regards them as just another electronic tool to be used to make life easier or more enjoyable. Also, that person is probably just a bit intimidated by computers.

A person who is not interested in computers? Well, that eliminates everyone who is reading this, but read on anyway.

Now, what percentage of VCR owners have never learned to program their VCR? How many do not know what some of the buttons on their cable TV remote unit do? How many housewives are failing to take advantage of half the pushbuttons on their microwave, or their washing machine? I do not think anyone has the answer to those questions, but I am sure that the percentages are very large!

Many people who buy a new appliance NEVER read the manual. They learn some of its features by experimenting, and never use the rest. Most other people read the manual one time, file it away with the warranty or lose it, and operate the appliance based on what they remember from that one reading. Of course, there are an increasing number of people who are incapable of reading the manual at all, and very few people who are capable of writing a manual that anyone can understand!

The average home computer buyer, knowing nothing about computers, can easily be convinced that he needs 640k a RAM, a hard drive, a mouse, and who knows what else. He needs all those things like he needs a hole in the head, and he is completely baffled by the technical jargon in the manuals that come with the machine.

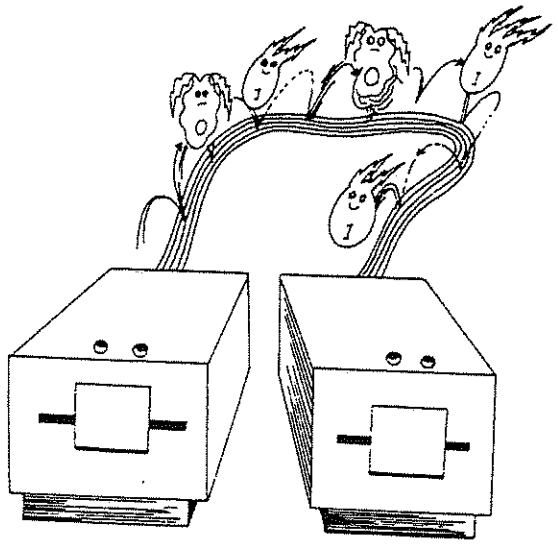
His computer probably comes bundled with an assortment of "free" software that is alleged to be worth more than the machine itself. It is probably excellent software - but each program comes with a thick manual, hopefully written in intelligible English, which must be studied before the program can be used.

Big programs like that are fine for the workplace, where a worker becomes familiar with a program and remembers how to use it because he uses it every day. For the typical home computer user, they are totally impractical.

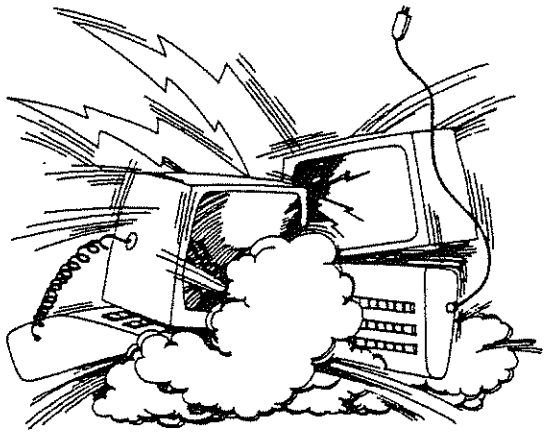
So, what is a HOME computer? It is a computer with no more memory than is needed to do the job, practically automatic in operation (i.e., with built-in disk operating system!), with one disk drive, and with an adequate supply of short simple programs to do what needs to be done at the moment and no more, so simple that they can be operated by reading on-screen instructions and prompts.

I happen to own such a computer. It is called the Texas Instruments TI-99/4A HOME Computer.

END OF ARTICLE



copy



crash

The IBM SHOP

with Cyril Bohlsen

42mB Seagate ST351A/X HDD IDE	$ 45.00
5.25" 1.2 mb FDD S/H	$ 30.00
3.5" Disk storage box	$ 10.00
5.25" Disk storage box	$ 10.00
Parallel printer cable	$ 5.00
Serial printer cable	$ 5.00
3 Button mouse	$ 14.00
Mouse pad	$ 1.50
Power splitter cables	$ 6.00
3.5" FDD mounting kit	$ 6.00
3.5" power adaptor cable	$ 6.00
Mouse adaptors 25M to 9F/M	$ 5.00
Mouse adaptor 25F/M to 9M	$ 5.00
Keyboard 101 key	$ 30.00
IDE I/O card 2-ser, 1-par, game ports 'Prime' 2C super	$ 25.00
486 mother boards 256k cache S/H	$ 45.00
Josstick "Blastick" (IBM)	$ 20.00
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Sound card "Thunder Board" 8it	$ 15.00
Telerom CD (Aust. phone book	$ 15.00
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486 DX-2/66 CPU 3.45V Texas Inst.	$ 65.00
486 DX-2/66 CPU (IBM)	$ 65.00
1mb Simm 30 pin 70ns with Parity	$ 55.00
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HP DeskJet Printer Model C2614A
300 dpi laser-quality printing
Fast up to 240 cps, with sheet feeder $ 250.00

For current pricing of items not listed please contact Cyril Bohlsen at the general meetings or Phone (02) 639 5847

NOTE : All prices listed are at time of printing, and may change at any time. Prices do not cover posting and packaging.

END OF ARTICLE

Continued Tech Tips from last month

I then typed 'Win' (I had forgotten about this problem) and up came the intro screen, and then a little hour glass appeared. I did a little testing to see if Windows had any real memory increase, which it did, to the tune of the extra UMB, and felt another warm feeling inside.

Fixing a broken Windows

I have taken to a little do-it-yourself window cleaning, deleting any files that don't look like they're necessary. However I inadvertently deleted a file from WFWG 3.11 that was not crucial to the running of Windows, but prevented it from using 32-bit disk and file access (which used to work fine). I dragged out my dusty Windows tome again and read it front to back, trying to figure out which file or files went on holidays, and in the end I gave up and decided to dump Windows (and all the Apps) and start again.

Being a responsible user and an advocate of safe computing, I backed up all my data, and then proceeded to re-install Windows. But I forgot to delete anything from the Windows directory, and when I ran Setup, after the usual introductory screens, I was confronted with an until now, never before seen, message, asking 'do you wish to upgrade your Windows now?' Well, my copy of Windows is the full version for new installation, not an upgrade, yet Windows had the good sense to see its old self and carefully installed itself again without touching any application or user files and settings.

After starting up after the reinstall there was not one change anywhere, except for 32-bit file and disk access back at work. Keep in mind this does not clean out any dead wood from anywhere including old *.ini files and the like. It just replenishes corrupt or missing Windows files.

Tony Foote

Dust is the most common problem with CD-ROM drives, and the fault seems to creep up slowly, until eventually you can't read any CDs at all. Opening up a CD drive to clean it out is not generally a good idea, unless you are experienced in such matters, so the cleaning disc sounds like a great idea. Like cleaning floppy disk heads, most of us only worry about it when we can't use the drive any more, so it's nice to know that there's a solution out there.

Dust in our PCs has been a fact of life ever since IBM put the fan in the original PC around backwards, so instead of blowing nice, clean (filtered) air over the PC's insides to keep them cool, it sucks the air in through every little opening in the case, dust and all, and drags it through the PC and out the back. Since filtering air from such a multitude of sources is virtually impossible, the designers left the filter out too.

On your last point, it's true that Windows is reasonably intelligent when it comes to re-installing it over the top of a previously-installed copy. Where this won't help you, however, is where you have loaded something, like a third-party hardware drive, that doesn't work with your particular hardware. Windows, in its attempt to retain as much of the previous installation as possible, will keep the settings for the misbehaving driver, and if that was actually stopping Windows from loading, then chances are, the new installation will have the same problem. In those cases, the only solution often is to go through the painstaking process of reinstalling from scratch.

Tips for beginners

Here are some tips for those readers who don't know a lot about computers, yet would like to learn more. Here are a few DOS commands and switches that you don't often read in manuals, which may be of use to some readers.

Del *.* /p

This is a good command if you need to delete several files, but also wish to retain some. This command will display each file name in turn, and ask if you want to delete it.

Deltree *.*

This is similar to the above, except that this command also fires you the option to delete directories and their sub-directories, as well as files. Again, it asks permission to delete or keep each file or directory.

Dir filename.ext /s

This command searches all sub-directories for a specific file (or files) that you have specified.

Help

If you're really stuck and can't find your DOS manual, typing 'help' will run the DOS Help utility. Or if you want to know more about a certain command, type '{command} /?', which will display information about options for that particular command. For instance, 'format /?' will display information about available options for the Format command.

Win {command}

This loads Windows, and executes the program specified by {command}. For example typing 'win winword' will run Word for Windows from the DOS command line.

Garry Gibson

Take special care with the Deltree command, as it is extremely powerful (read, *dangerous*). Deltree will delete files and directories regardless of file attributes (System, Read-only and Hidden). So you can easily delete files that you don't see in a normal directory listing. 'Deltree *.*', typed in the root directory of a drive, can delete the hidden DOS system files, rendering the disk unbootable.

Although Deltree deletes the contents of any specified directories recursively, it doesn't ask whether to delete each file or sub-directory in these directories. It only asks the question once, for the directory itself, and then proceeds to delete it and everything in it. You can of course be more specific about what you tell it to delete, by specifying a more specific file specification on the command line.

For the really game, there is a '/y' switch, which forces Deltree to delete all specified files and directories without asking. Naturally this should be used with extreme caution, although it's a handy command in batch files, for cleaning up after some operation.

When running a Windows program from the DOS command line, you have to specify a full pathname if the executable file isn't in a directory in the system PATH variable. So 'win winword' will only work if the Word for Windows directory is in the PATH.

Dead COM port

I am a comparative beginner with computers, and own an Osborne Turbomate 286, which I mainly use for packet radio. To obtain the most from the machine, I need two serial ports, preferably COM1 and COM2, as many of my programs will only run on those.

Unfortunately, I can't get COM1 to work. I have tested it with Checkit 3 and a loop-back plug, and it shows that the DTR register is not working, and also the pin which controls the baud rates. In an endeavour to circumvent this problem, I obtained another I/O card with two ports, one of which I configured to be COM1. I disconnected the plug from the old COM1 port and then tried the new configuration, but received the same answer from Checkit. Another diagnostic program that I have, Informer, says that COM1 has no interrupt, although this is not shown by Checkit.

Keith Danes

Diagnosing that sort of hardware fault by correspondence is difficult, especially with conflicting reports from the two diagnostic programs, so the best I can do is to offer some suggestions as to things for you to try. First of all, you don't say that you completely removed the other I/O board before trying the new one. Although the COM1 port on that card may not be working properly, you will have problems with any other device at that address (such as the new I/O card), and will explain why the new card is not working either.

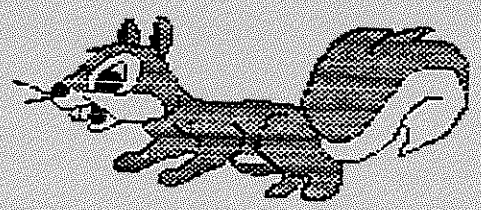
Assuming that you only have one I/O card in the system at one time, then there are really three possibilities. The first is that both cards have COM1 disabled. However, if Checkit and your applications detect this port, then this is unlikely. Still, check the jumper settings on the card, to make sure they're correct. The next possibility is an address or interrupt conflict with another piece of hardware. Make sure that you don't have anything like an internal modem configured to the same address, or using the same interrupt line (IRQ4). You can't

normally have more than one device on a given interrupt line, and having more than one device using the same piece of I/O space is a sure way to disaster. Remove any other expansion cards you might have in the system, and see if the problem remains.

There really isn't much in the way of configuration for a serial port — it's either enabled or disabled; it can be located at one of four standard COM port addresses, and it can use one of two (or maybe more) interrupts. Provided that it is jumpered to COM1 (3F8 hex) and interrupt 4, it should work, provided that nothing else is using that address and interrupt. Make sure that your COM2 port is set to the right address (2F8 hex) and uses interrupt 3. If you had a COM3 port that would normally cause an interrupt conflict with COM1, but since you only mention two COM ports, the second one should be set up as COM2, not COM3.

Finally, there may be a fault with the motherboard, or an incompatibility between the I/O card and the motherboard, although this is pretty unlikely. The only real way to ascertain this is to try your I/O cards in another machine, to see if they work there. If not, you probably have two bad (or misconfigured) cards. If they do work, and you have eliminated all the other possibilities, then it looks like a motherboard fault.

END OF ARTICLE



Hints for DOS utilities

One problem I've found with a lot of farm programs, is that they ask you if you want to backup your work on exit. This is a good idea, but most look for the DOS Backup command, which in DOS 6 is Msbackup. My solution to this problem was to expand the DOS 5 backup.exe file to my DOS directory.

Another small problem I've run into is if Windows is installed after DOS 6, the path needs to be changed so that c:\dos is before c:\windows, otherwise commands like smartdrv or MSD call the (older) Windows version.

Allen Hill

Lights on, nobody home

I have a 386DX/40 computer, and sometimes when I switch it on it doesn't work. The green power light on the computer is off, although the light on the monitor is on, but there's no image on the screen. When this happens I have to switch it off and on many times before it starts to work.

Also, sometimes when I'm running a program the computer will suddenly stop, and I have to turn it off and back on again. My computer is less than two years old, and this problem started to happen about five months ago.

'MC' Penrith, NSW

That is almost certainly a power supply problem. The green light on the monitor comes on, because it has its own power supply, but there's no image because the computer isn't powering up to generate one. The power supply is a definite no-go zone for the end user — there are potentially lethal voltages in there, and nothing you could do to fix the problem yourself. My advice is to find a friendly dealer who is willing to let you try a new power supply (or maybe try it for you). It's likely to cost more than a new supply to try and fix your present one.

REGIONAL GROUP REPORTS

Meeting Summary For **FEBRUARY**

Central Coast	10/02/96 Saratoga
Glebe	08/02/96 Glebe
Hunter Valley	11/02 18/02/96
Illawarra	06/02/96 Keiraville
Liverpool	09/02/96 Yagoona West
Sutherland	16/02/96 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 Sunday of each month at members homes starting at 3pm. Check the location with Geoff Phillips by leaving a message on (049) 428 617. Please note that the previous phone number (049)428176 is now used exclusively by the ZZAP BBS which also has TI support. Geoff.

ILLAWARRA Regional Group

Regular meetings are normally held on the first Tuesday of each month after the TIsHUG Sydney meeting at 7.30pm, at the home of Geoff Trott, 20 Robsons Road, Keiraville. A variety of investigations take place at our meetings, including Word Processing, Spreadsheets and hardware repairs. Contact Geoff Trott on (042)296629 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). After 10.30 PM or at work (02)708 1987 Liquorland YAGOONA for more information.

*** ALL WELCOME ***

9th JANUARY 1996 : MY PLACE

Bye 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 on the first Saturday of the month. They are held at the MEADOWBANK PRIMARY SCHOOL on the corner of Thistle Street and Belmore Street, Meadowbank. Regular items include news from the directors, the publications library, the shop, and demonstrations of monthly software.

FEBRUARY MEETING -3rd FEBRUARY

MARCH MEETING - 2nd MARCH

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

FOR MARCH magazine

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.