



# NEWS DIGEST

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Focusing on the TI99/4A Home Computer

Volume 9, Number 5

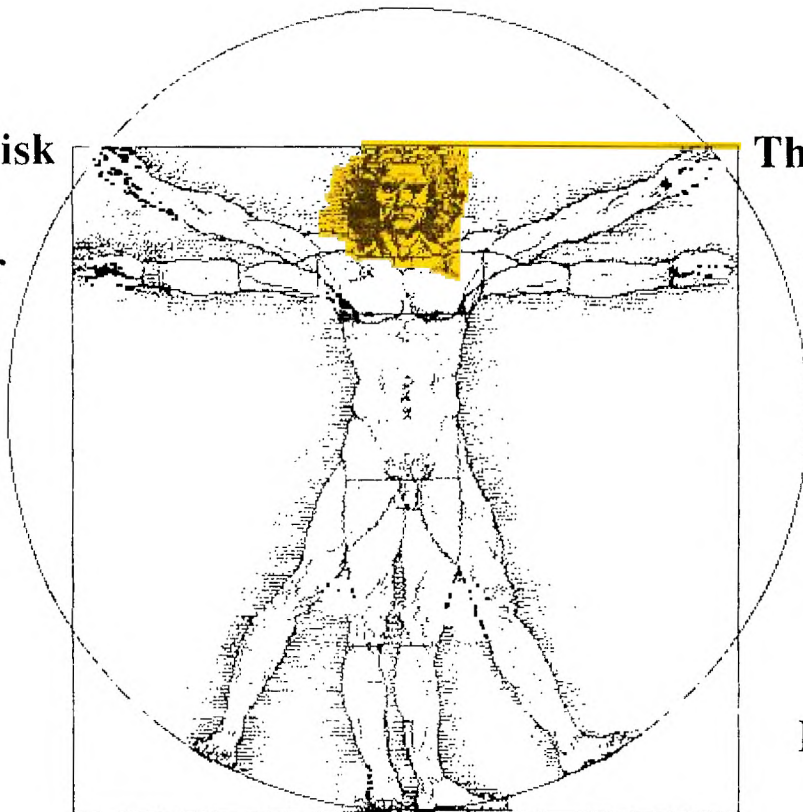
June, 1990

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## Come to the June Meeting



EPROM RAMdisk

The Missing Link

GRAMulator

P-GRAM card

Pix Pro

Software  
Demonstrations

## for Hands On Demonstrations

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P.O. Box 214, Redfern, New South Wales, Australia, 2016

**\$3**

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TIsHUG (Australia) Ltd.

**TIsHUG News Digest**

June 1990

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Australia

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**Membership and Subscriptions**

Annual Family Dues \$30.00

Overseas Airmail Dues A\$60.00

**TIsHUG Sydney Meeting**

The next meeting will start at 2.00 pm  
on 2nd of June at Ryde Infant School,  
Tucker Street, Ryde.

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**Kits now available**

The shop has kits of parts for the following:  
AT multifunction card disk controller - \$92.50  
RGB colour monitor interface - \$30  
Mini i i Forti music card, including PCB - \$65

**Editor's Comment**

by Bob Relyea

Many club members who are not either a director or closely connected with the production of the TND in some way would not be familiar with the timing involved in getting the club magazine ready. I will briefly outline the steps. Most of the material for the TND comes to me which needs to be edited and then printed on the daisy wheel printer. I have to have this done by the SECOND MONDAY of the month because that is the evening that I attend the Illawarra regional meeting and deliver the edited material to Rolf Schreiber. He, as in the past, is responsible for selecting articles, doing the paste-up and then sending the lot to the printers where it remains for the better part of a week. The completed TND gets back to Rolf the fourth week of the month when it is placed in envelopes and sent to the members by the middle of the week trusting that everybody gets a copy in time for the meeting.

The main point that I am trying to make is that if you want an article to appear in a particular issue then it has to be to hand by the Sunday before the second Monday of the month, at the latest. This includes material given to me in the form of a disk, cassette or information on the BBS. Obviously I cannot get everything that is given to me on the Sunday before ready by the next day if it results in a lot of material to be edited. So to be on the safe side, it should be to me on the Saturday before the second Monday which is often the Main Meeting Day.

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# Co-ordinator's Report

by Dick Warburton

The future of the club is in your hands, and what you decide, will determine whether we move into the 90's, a strong and vigorous club, or simply fade away as some other TI User Groups have. We are still a strong and viable group, self sufficient, self reliant, creative, hard working and able to go still further. We can become even stronger if we have the will and motivation to do so. We face two major problems. Firstly, interest in the TI has declined, and our membership is dropping. The second problem stems directly from the first, in that as our numbers drop past a critical level, our costs rise significantly.

As I see it, to maintain or increase our present membership, we have a variety of options available.

1) We can actively recruit new members for the club, by inviting anyone we know with a TI to come with us to a meeting, and

2) We can aim at providing even better services for our members, by means of-

- Low cost software.
- Low cost servicing of hardware
- A shop which sells what our members want.
- Tutorials covering a wide variety of subjects.
- Games competitions
- Project development.
- New software.
- Keeping up to date around the world.
- Maintaining the quality of our monthly magazine.
- Maintaining our library.
- Maintaining our bulletin board.

3) We can actively promote the club to a public which hardly realises we exist. This can be done by means of - Magazine articles, TV appearances, radio appearances, paid advertising etc.

4) We can widen the scope of membership to include members whose primary interest is another type of computer. As Ben Takash pointed out very clearly last month, perhaps 80% of TI members either own or use an IBM type machine. They like to meet and talk about their specific interests. They have computer needs, many of which could be met by remaining in this club. A widened membership base would be a way to breathe new life and motivation into the group. It would attract new talents and skills into the group. Some members feel anxious that such an action would hasten the demise of TISHUG. However, as Ben points out, it is only a matter of time, before we simply fade away. I own an IBM machine, but still find my TI infinitely more satisfying to use. I enjoy the range of things I can do on the TI. I really like the challenges in continually extending this "orphaned" out-of-date machine. I feel that Ben's ideas should be debated, and that we should consider what he says carefully.

The problem of finance, while not yet critical, is becoming a serious worry. We are using up our reserves too fast. Because our membership is dwindling, our costs are rising. How can we stem this financial bleeding? There are several ways:

- a) We can cut our costs by eliminating all unnecessary expenditure.
- b) We can sell unnecessary assets.
- c) We can trade our way out by selling what members need through the shop.
- d) We could raise membership fees.
- e) We could set out to raise money for our club through money-raising activities.

f) We could increase our membership numbers.

g) Perhaps we could seek a government subsidy. They give it for stranger things.

As a group we need a vision of where we are going. I do not believe that we should just drift into 1991 without determining our own future. I am proposing that we should soon call a meeting of interested members to discuss where we are headed, and how we will achieve our goals. If you have ideas and are willing to contribute in a positive way to our club, please put your thoughts in writing and send them to me.

I personally believe that this club has a bright future, and I am committed to helping in any way I can. Just the social contact is worth preserving, let alone the mix of ideas, the support and help provided, and the knowledge gained. Our club seems almost unique among other computer groups. We have an organisation which is worth working for. If you have gained through the club, now is the time to give back to the group what you can afford. We need ideas and we need action. I can see exciting times ahead as we take charge of our own future. I expect that at the next main meeting we will be able to set a date for a "TI Think Tank". See you at the next meeting.

Dick Warburton.

o

## Letter to Editor

I believe that this will be a trying year for TISHUG, and it will be interesting to see how many members rejoin. For those that do not, it probably means that they get insufficient use out of their computers to justify the \$30 fee. If, like many others before them, they have bought a computer of another type, they may be enticed to join another computer club. However, they will soon find out that there is no other computer club in existence that even begins to compare with the TI99/4A user groups. Unfortunately, by the time they find out, it will probably be too late.

Anyway, I must get to the point of this letter, and that concerns club funds. No club can exist without working capital (money) and I believe that our funds are being run down at a very fast rate. Perhaps now is the time to examine where the bulk of the monies are going to see if we can do something about it.

There is no doubt that the club magazine consumes most of the bank balance during the year, but there is also no doubt that the members who attended the AGM in February did not want any reduction in its quality, and rightly so, as this is the a hub of our club's activities and something that we are proud of.

The next major expenditure item, I believe, is that which can be grouped as financial fees for the annual audit and tax return. I am told that these amount to some \$700 per annum. Can we really afford the luxury of being an incorporated company? What benefit does it offer us? Since we do not normally purchase large stocks of any particular item, our purchasing power is not really any better that of the man on the street. Consequently, we cannot look to the club shop to make enough profit to fund that \$700 fee. Even if the club does make some profit, why should we then give it away to some "fat cats" for a service that does not appear to offer any benefits?

But, you say, TISHUG members are protected from individual lawsuits under the Companies Code. Who on earth is going to sue you, and for what? How many other user groups, TI or otherwise, are incorporated? The reality of it all is that one day we will run out of funds, and that will be the day that the club folds. What use will incorporation be to us then? All the club assets will go to some unknown charity and it will be the end of an era. From where I stand, being incorporated is

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# Secretary's Notebook

by Terry Phillips

The May meeting was an all day event conducted in beautiful Sydney Autumn weather. It was a bit disappointing that not as many members turned up as I had anticipated but there were about 50 present with the majority arriving after lunch. There was plenty to keep people occupied with sorting out their various problems, general discussions with others and keeping Percy busy all day in the shop.

The June meeting, to be held on Saturday, 2 June, will see various demonstrations including the EPROM ramcard, the MUSIC CARD, operating 3.5 inch disk drives and software that will be available through the shop. MUSIC CARD PCB's and 3.5 inch disk drives are also available through the shop.

Memberships are being renewed at a reasonable rate and the current situation with the club is:

87 members to 30/4/91 \*  
1 member to 31/3/91  
2 members to 28/2/91  
6 members to 31/12/90  
7 members to 30/11/90  
2 members to 31/10/90  
3 members to 30/9/90  
2 members to 31/8/90  
7 members to 31/7/90  
6 members to 30/6/90  
14 members to 31/5/90

\* includes 5 life members.

71 memberships expiring on the 30th April are yet to be renewed, however looking through this list of names, I anticipate that at least 30 to 40 will renew given a gentle reminder.

At the committee meeting held on 5 May the following items, which may be of interest to members were discussed:

1. In an effort to defray costs it was suggested that members may like to take out memberships of local and overseas groups and then donate those groups newsdigests to TISHUG. This would have an obvious saving in postage costs. Dick Warburton will expand on this topic when he addresses the members at the next meeting.

2. Another attempt will be made to dispose of some under utilised assets, namely a HI SPEED TAPE COPIER and a portable OVERHEAD PROJECTOR. If you are aware of any organisation that would like to purchase these items then have a word with one of the Directors.

3. Dick Warburton is to source out a supply of components for sale as a kit for construction of the colour monitor interface. If you are interested in a component kit then let Dick know.

4. The possible deal with the sale of printers (as mentioned in the April issue) has fallen through.

5. A more concerted effort be undertaken to encourage local software authors to produce software. Dick Warburton has taken this task on board and will be approaching members who have in the past contributed software.

6. The future direction of the group was discussed at length. It is hoped that a suitable panel of interested people will soon be assembled to thrash out this very important subject.

Here is a selection from mail received over the past month:

Terry Raftery of Berry writes to say he is rarely able to get to meetings but really enjoys receiving the

TND promptly each month. The continuing high standard is a credit to all concerned.

John Royal of Berowra wrote seeking advice if there is any way to print the results of the TRACE command to a printer. If anyone has a solution please let me know so I can pass the information on to John.

David Winton of Booragul writes to say he enjoys the newsdigest, especially hardware tips. Bill Walker of Hallidays Point also enjoys the newsdigest and is sorry that he does not live closer to Sydney so that he can attend meetings.

Frank Hall of Old Bar wrote suggesting that shop prices appear too low and items are sold at little profit to the group. The idea with the shop Frank, is to make goods available at very competitive prices so that members will purchase from the shop, rather than going elsewhere. This enables a quick turnover which in turn enables further bulk purchases to be made for members benefit.

That is it for this month. Hope to see as many as possible at the next meeting.

## Treasurer's Report

by Geoff Trott

It seems that finance is going to be a bigger issue this year than any other in the life of TISHUG. We have succeeded (to my way of thinking) in reducing the large bank balance to a nice working capital, but now we must learn to live within our income each year. This gets harder as the numbers become smaller so we must look carefully at our expenses. Everyone can help by using the shop as much as possible for all your purchases. We have an excellent shop keeper this year in Percy and he is keen to provide a good service by mail and will also try to supply all your needs. If you do not see it, ask Percy.

Current assets at 28/02/90	\$5945.22
Add deposits in March	\$2227.70
	\$8172.92
Less expenses in March	\$2159.05
Current assets at 31/03/90	\$6013.87
Add deposits in April	\$2663.05
	\$8676.92
Less expenses in April	\$1989.94
Current assets at 30/04/90	\$6686.98
Add deposits in May	\$1044.10
	\$7731.08
Less expenses in May	\$2525.93
Estimated current assets at 19/05/90	\$5205.15

## For Sale

Peter Schubert MiniPE system for \$700  
32K memory expansion, PIO/RS232, disk drives, cassette player, joy-sticks, speech synthesizer, widget cartridge expander, Extended BASIC module, Alpiner, Parsec, Video Chess, Touch Typing Tutor, Multiplan, Funnelweb, TI-Base, TI-Artist, TI-Writer, Picasso, 87 tapes, 100 plus disks, books, magazines and documents.

TI Peripheral Expansion System for \$850  
32K memory expansion, PIO/RS232, double sided disk drive, 184K RAMdisk, joy-sticks, Disk Manager 2, Editor Assembler, Extended BASIC module, Parsec, Graphx, Multiplan, Word processing, TI-Artist, Picasso, 100 plus disks, books, magazines and documents.

Star 10X Dot Matrix printer for \$350

Phone Jack for details on (02)57 5528.

# TISHUG Software

## Column by Rolf Schreiber

As this column is being written, the rest of the magazine has already been pasted up, thereby severely restricting the amount of space available for this column. For this reason I will not be able to describe in detail all the software that has been released. The following two disk are new additions to the library.

DISK A400 is a brand new import from the USA. It is a demonstration (NOT the actual program itself) of THE MISSING LINK, described as "the ultimate Extended BASIC upgrade". The text and graphics extensions to Extended BASIC demonstrated in this product are superior, in my opinion, to similar commercial packages. Included is an applications program called PAPER SAVER, which allows TI-Writer users to preview their text before sending it to the printer. Each page can be viewed exactly as it will appear, complete with underlining and overstriking. PAPER SAVER compares favourably with similar software on a Macintosh. Featured also are various text routines in 32, 40, 48 and 60 column modes, an impressive graphics demonstration, and sprite and 'turtle graphics' displays. Lastly, a digital clock with ticking second hand completes the demonstration. If you are interested in TISHUG organizing a bulk purchase, please contact Percy at the shop for more details.

DISK A401 is PIX V1.2, a Faireware offering by Jim Reiss. The program is a scaled down version of PIX PRO, fully described elsewhere in this issue. The program autoboots from XB and has the ability to load and save pictures in any of five formats, as well as print out a hardcopy. Included on this SSSD disk is a short documentation file and seven picture files.

DISK A52 - Nibbler, a disk copying utility.  
DISK A373 - V4 No.4 of HCM 'ON DISK' series (SSSD).  
DISK A378 - V5 No.4 of HCM 'ON DISK' series (SSSD).  
DISK A382 - BOOT, a disk based version of MENU, fully described in another article this issue.  
DISK A383 - BEST OF 99'ER disk, all the 37 programs which are featured in the book "THE BEST OF 99'ER VOLUME 1" (DSDD) o

## Ordering Library Software

In the past, club members were able to obtain copies of club software disks not currently on sale from the shop directly from the software librarian, namely, Terry Phillips. I will continue this practice along modified lines.

When you order software, please specify the number(s) of the disk(s) that you want, as shown in the software library catalogue. A copy of the software catalogue is available on disk from the club shop. Ask for disk A000 (cost is \$2.00) if your system can handle DSDD, or else ask for A000(A) and A000(B) if your system can't. The set (2 SSSD disks) contains the catalogue files in an archived form, together with the latest archiver program. If you don't own a printer or you are cassette based, the catalogue (about 100pp) can be ordered in a printed form for \$8.00.

In an attempt to speed up the overall process of duplicating software, I will be gradually archiving all the club disks. Each disk ordered will be copied as an archived file, containing all the files on that particular disk, but in a compressed form. In this way I can fit the contents of about 6-8 volumes on a single DSDD disk.

When ordering software directly from me, please include your full name, your postal address, your telephone number, the type of disk controller card you are using (TI, Myarc, Corcomp or AT/Peter Schubert) and the type of disk drive you have (5.25", 3.5", single sided, double sided, 35 track, 80 track, etc) Then list

the volume numbers of the disks that you want me to copy. Avoid requesting just some files on a particular disk as this makes the whole process of copying much more time consuming for me. If you are cassette based, you can still order individual files from any software disk. The only restriction will be the suitability of a particular program for cassette use. Please don't expect me to supply pirated copies of commercial software currently being sold by the handful of software vendors still supporting the TI. Besides breaking copyright, this would also only serve to quicken the demise of software support for our computer.

Unfortunately, owing to rapidly diminishing club funds, I will be forced to charge a copying fee. All payments go towards meeting the costs associated with the running of the software library, including the acquisition of new software. The levy on copying will be \$1.00 for each volume copied, and does not include the cost of the media. Copying individual files will cost \$0.50 each (cheaper to get the whole disk!), while copying to cassette will be a fixed cost of \$5.00 for up to 10 programs. Members can supply their own disks, or can pay \$0.65 for each disk that I use to copy the software onto. On average 1-2 volumes will fit on a SSSD disk, 3-4 volumes will fit on a DSDD or SSDD disk, while 6-8 volumes will fit on a DSDD disk. If you want the disks posted to you, please include extra for postage and packing (\$2.00 minimum, for up to 4 disks, then \$0.35 per disk extra). If in doubt about how much money to send, please send extra rather than not enough. Any surplus will be credited against future purchases. o

## DataWriter, version 1.2

by Jim Peterson, Tigercub Software, USA

```
100 DISPLAY AT(1,7)ERASE ALL:"DATAWRITER V1.2": by Jim
    Peterson:"": "To be used to add instruc-" : "tions to
    programs."
110 DISPLAY AT(6,3): "Type the instructions, and" : "format
    them - centered or" : "hyphenated or right-adjusted"
    : "just as you want them, ENTER"
120 DISPLAY AT(10,1): "each line and it will be" : "written
    to a D/VI63 file." : "When finished, enter END."
140 DISPLAY AT(24,5): "PRESS ANY KEY" : DISPLAY AT(24,5)
    : "press any key" : CALL KEY(0,K,S):: IF S=0 THEN
    140
150 OPEN #1:"DSK1.@DATA", VARIABLE 163, OUTPUT : CALL
    CLEAR : DEF L$(X)=CHR$(120)&CHR$(X)
160 L=L+1 : X=X+1 : ACCEPT AT(L,0):M$ : IF L=24 THEN
    CALL CLEAR : L=0
170 IF M$<>"END" THEN PRINT #1:L$(X)&CHR$(147)&CHR$(199)
    &CHR$(LEN(M$))&M$&CHR$(0):: GOTO 160
180 PRINT #1:"SKIP INSTRUCTIONS?"
181 PRINT #1:"PRESS ANY KEY"
183 PRINT #1:""
184 PRINT #1:""
190 PRINT #1:CHR$(0)&CHR$(4)&"@T"&CHR$(190)&CHR$(200)
    &CHR$(LEN(STR$(X-1)))&STR$(X-1)&CHR$(0)
250 PRINT #1:CHR$(255)&CHR$(255):: CLOSE #1
260 DISPLAY AT(12,1)ERASE ALL:"Enter NEW, then" : "MERGE
    DSK1.@DATA , then RUN" : "to see if everything is OK."
270 DISPLAY AT(16,1): "If so, load the program" : "needing
    instructions, make" : "sure its lowest line number" : "
    is more than 8 and the high-"
280 DISPLAY AT(20,1): "est is less than 30721, then" : "
    enter MERGE DSK1.@DATA." o
```

continued from page 10

loaded. Now locate the word located at 00B8. It should read CO20. Change this and the next word to read; O6A0 2020. Write sector 24 back to the disk and that is it. You are done!!

Check out your work by loading the EA using the EDIT utility. You should now have a cyan screen with black lettering. If you do not like this colour combination, there is nothing stopping you from selection your own colours. Merely load sector 22 back in and change the word at 002C which now reads 8717 to read 87xx, where xx is equal to your own preferred colour combination (See the E/A manual page 330). Write the sector back to disk and check it out. o

Hi, welcome again to Shop News. I am pleased to report that the shop results for March and April were very encouraging thanks to all those members who bought heaps of disks and other software etc. this support is greatly appreciated and needed to keep the club viable.

Two new products which have been on sale in the shop since the April meeting are 5.25in. HD (High Density) disks and 3.5in. disks for members who have equipment to run these items. The continued availability of these products can only be justified if there is a reasonable demand for them, so come on those members who can use either of these disks, let your head go and stock up - at the asking price you cannot go wrong.

For those members who have ordered the coloured monitors, I have been informed that if you have not received your monitor by the time you read this you should receive it shortly afterwards, we apologise for the delay in getting these to you but there has been an unavoidable hold-up with the supplier over which we have no control. The monitor interface kits have also been slow in coming but I am confident that they will be available at the June meeting.

For those members who purchased version 2.01-2.03 of TI Base, the update version, 2.04, is now available and can be obtained at no charge by bringing your old version to the next meeting and I will swap it over for the new version.

Most members who purchased the revised version of Funnelweb earlier this year will agree that Tony and Will McGovern have greatly enhanced this Word Processing program, but the McGoverns apparently will not rest until they have produced the perfect product - yes you have guessed right - there is a further update out but still with the same version Number, ie 4.12 (or 4.21? ED), it can be readily identified by looking at the date in the -READ-ME file, the latest version is dated Apr/03/90. I believe that a few very minor bugs have been fixed but unfortunately I do not know what they were. Those members who purchased the program this year can obtain the latest update, free of charge, by returning your existing copy to the shop at the monthly meeting. Formats available will be DSDD and DSSD.

I again remind country and interstate members that most of the shop stock items are available by mail order but the cost of postage and packaging must be included with your order. Whilst I understand that in previous years the dispatch of mail orders has left a lot to be desired, I can assure you that this has now been rectified and you can expect reasonably prompt service providing the items ordered are in stock.

In addition to items listed in the May issue of TND the following are also available:

New release software disks -----	\$2.00
(See "Software Column" for details)	
Asgard News Vol. 2 No.1 -----	\$3.25
Asgard News Vol. 2 No.2 -----	\$3.25
Lithium Batteries - 3.6V -----	\$4.00
Mini Speakers - 8 Ohm -----	\$1.50
Power Leads (need std 3 pin plug) ----	\$1.00
Transformers - 60VA -----	\$16.00
32K Printed Circuit Boards Only -----	\$7.00
Module PC Boards (Single chip vers.)--	\$9.00
32K Memory Chips -----	\$17.00
7 Way PCB DIL Switch -----	\$0.50

**Packaging and Postage Charges:**

Up to 2 Disks-----	\$1.60
Over 2 up to 5 Disks-----	\$2.10
Over 5 up to 12 Disks-----	\$3.00
Other items at actual postage cost.	

## Correction to Tips from the Tigercub #58 by Jim Peterson, Tigercub Software, USA

The first few disks of Tips #58 that I sent out had a poor version of this program. This is the corrected version. First key this in

```

1 DISPLAY AT(12,1)ERASE ALL: "SKIP INSTRUCTIONS? Y" ::
ACCEPT AT(12,20)SIZE(-1)VALIDATE("YNyn"):Q$
:: IF @Q$="Y" OR @Q$="y" THEN 8
2 DISPLAY AT(24,5)ERASE ALL: "PRESS ANY KEY"
3 RESTORE 30721
4 REM
5 FOR J@=1 TO T@ :: READ @ $ :: DISPLAY AT(J@,1):@$: "
6 CALL KEY(O,K@,S@):: IF S@=0 THEN 6
7 NEXT J@
8 DATA 0
9 RESTORE 8 :: READ N
10 REM
Save it by - SAVE DSK1.D/MERGE, MERGE Then key this in -

100 OPEN #1:"DSK1.D/MERGE", VARIABLE 163, INPUT :: OPEN #2
:"DSK1.D/MERGE2", VARIABLE 163, OUTPUT :: L=129
:: FOR J=1 TO 10
110 LINPUT #1:M$ :: PRINT #2:CHR$(O)&CHR$(L+J)&CHR$(156)
&CHR$(253)&CHR$(200)&CHR$(1)&"1"&CHR$(181)&
CHR$(199)&CHR$(LEN(M$))&M$&CHR$(O):: NEXT J
120 CLOSE #1 :: PRINT #2:CHR$(255)&CHR$(255):: CLOSE #2

```

Run it to convert D/MERGE into a merge format file D/MERGE2 on DSK1. Then key this in. Do not change line numbers.

```

100 CALL CLEAR :: OPEN #1:"DSK1.@DATA", VARIABLE 163,
OUTPUT :: DEF L$(X)=CHR$(120)&CHR$(X)
105 PRINT #1:L$(X)&CHR$(161)&CHR$(200)&CHR$(6)&"@DUMMY"&
CHR$(O)
110 L=L+1 :: X=X+1 :: ACCEPT AT(L,O):M$ :: IF L=24 THEN
CALL CLEAR :: L=O
120 IF M$<>"END" AND M$<>"end" THEN PRINT #1:L$(X)&CHR$(
147)&CHR$(199)&CHR$(LEN(M$))&M$&CHR$(O):: GOTO 110
130 REM
140 PRINT #1:CHR$(O)&CHR$(4)&"T@"&CHR$(190)&CHR$(200)&CHR$(
R$(LEN(STR$(X-1)))&STR$(X-1)&CHR$(O)
141 PRINT #1:L$(X)&CHR$(168)&CHR$(O)
150 PRINT #1:CHR$(255)&CHR$(255):: CLOSE #1

```

Enter MERGE DSK1.D/MERGE2 to merge in that file. SAVE the program as DATAWRITER. Then RUN it and try it out by using it to write itself some instructions. Answer the prompts with - DATAWRITER V1.2 by Jim Peterson

to be used to adding instructions to programs. Type the instructions and format them, centered or hyphenated or right-adjusted just as you want them to appear on screen, and enter each line. They will be written to a D/V163 file named @DATA. When finished, enter END.

Then enter NEW, then MERGE DSK1.@DATA, and RUN to see if everything is OK. If so, load the program needing instructions, make sure its lowest line number is more than 10 and the highest is less than 30721, and enter MERGE DSK1.@DATA.

And enter END, then OLD DSK1.DATAWRITER, then MERGE DSK1.@DATA.

## For Sale

I have 4 years issues of micropendium for sale from 1984 to 1989. I will sell the collection complete or single copys for \$1.00. If you enclose postage I will mail them to you if needs be or will take them to the monthly meetings. I also have for sale a stand-alone slimline ds/dd disk drive with 240 volt power supply. The drive is brand new - never used, just plug it in and it is ready to go. It is in an attractive case and will suit work with IBM or TI. I have both cables. Yours for \$150.00

HOME NUMBER 319 2572. Ask for LES

# Techo Time

by Lou Amadio

The technical details for last month's article on the single chip 32K memory expansion for the console came from Ross Mudie. Thanks Ross.

Tony Bell (Bomaderry) has built this project and will have some comments on the subject very shortly.

For Sale

I have an original stand-alone TI disk drive and a hard disk power supply for sale at \$70 each. The power supply will also power 2 low power floppies.

Modules: Mini Memory (\$30), PRK module \$15 and a complete TI LOGO System with documentation (\$60).

Please contact me at the address below if you are interested.

Ramblings

I do not have any specific techo article to write about this month so I will just ramble on a bit. If there is anyone who has a particular requirement or idea for a hardware project, please drop me a line at:

71 Walang Ave  
Figtree, 2525  
Ph (042)284906

1) Geoff Trott has completed a PCB version of his RAMdisk protector circuit. The circuit was originally designed for the Mini PE RAMdisk, but is suitable for the Horizon unit as well. An FET is inserted between the the RAMdisk battery and the WE (Write Enable) to the ROS chip. The FET ensures that the WE is disabled during power up and power down, the two most critical times for potential ROS corruption. Geoff also suggests that a 470uF capacitor be placed across the battery power supply.

2) The EPROM RAMdisk project is slowly evolving. There should be an article this month on the subject from Craig Sheehan. One of the problems that we face, according to Geoff, is the requirement for a 512K EPROM burner that accepts serial inputs. Files to be transferred to the EPROMS are firstly transferred to a floppy disk and have their headers modified to suit EPROM storage. The file is then transferred, sector by sector, from floppy to the EPROM burner via the RS232 port.

I believe that Dick Warburton has the only living example at present. The EPROMS are added to the top of existing RAM chips on a RAMdisk. Some additional decoder circuitry is required to utilise the new chips. Also, the ROS needs to be modified, and Craig has provided the software to do this.

3) Some members have experienced problems with the RGB monitor interface in the form of light horizontal bands moving down the monitor screen. According to Geoff Trott, this is due to inadequate power supply filtering. If you are using a 12 volt DC plug pack power supply, Geoff suggests that you also include the filter capacitor (min 470uF) on the RGB PCB after the rectifier diodes. A 10 ohm resistor in the positive supply line between the plug pack and the PCB will also improve power supply filtering.

4) Electronics Australia has an article on 240 volt mains filtering for computers and other voltage sensitive devices. More details to follow.

5) Geoff reports that a hardware mod in an O/S newsletter for the Myarc HFDC. The mod effectively eliminates the agonising delay that occurs when accessing floppies after a reset with no hard disk connected.

6) Some members are experiencing difficulties with the assembly of the AT Multi Function Card, particularly with regard to locating the correct holes (from an apparent choice of many?) in which to insert the relevant components. The overlay diagrams supplied the March and April TNDs have been drawn with a reasonably degree of accuracy with regard to component location. If necessary, use a photocopier to blow up these diagrams to their original size. Correct component location should then be fairly straightforward.

Those who are able to make it to the monthly meeting will be able to compare their card with a fully built up unit.

7) Cheap Disk Drive System? The cheapest way into a disk drive system for your TI is to:

- a) Install 32K memory expansion inside the console using a club supplied kit.
- b) Build the Direct I/O Interface for PEB cards (described in the TND late last year).
- c) Buy a TI disk controller and an Extended Basic Module (see TND ads).
- d) Buy a single sided disk drive from the club.

The whole lot should cost less than \$200 for parts.

8) TI Mouse? Now that a serial mouse can be bought for an IBM PC for about \$60, this may be a good time to look at the practicality of adapting one for the TI. Does anyone want a mouse? TI Artist is one program that was intended to be mouse driven. We do however need software to interface the mouse to the console. Any volunteers? How about it George? Geoff suggest that the software emulate time-based proportional joystick movement.

PS.

How about a club kit for an 80 column card for the PEB? This project will only get serious consideration if there is a reasonable response. o

continued from page 19

Now, most important: you must do as your twin did before! Tell your Twin the combination to the Dial Room door. Now your Twin will give you the spell book, just as you did earlier (really one of the neater parts of this game!). As soon as you have the book, go down the Lower Chute to the Lagoon.

Ah, air again! Take a deep breath, then sleep awhile, because you are probably tired again. Now learn Heef twice, Swanzo, drop the spellbook once, and go East into the Lagoon. Dive down to the bottom, and Heef the Spenseweeds, revealing a crate. Get the crate and return to shore.

Drop and open the crate. Inside, among other things, is a can of grue repellent. Get that, and walk Northeast along the Ocean Shore and North to the Mouth of the River. There is a cave to the West, it is an entrance covered by nasty-looking vines. Heef the vines, and Vardik yourself.

Now, spray the repellent on yourself and enter the cave. Wow! Grues are everywhere, and they do not fear the light!! Fortunately though, the repellent still works. However, I would not advise sticking around! So, move along West and you will come to three doors. Two of them lead to VERY unpleasant circumstances. You do not want those, so open the white door.

Inside the room is Belboz, who is possessed by the demon Jear. Swanzo Belboz, and the demon will leave him, and attempt to enter YOUR mind! But the Vardik spell will keep him out, and, with no host available, he will vanish! Belboz will now regain his senses, and will magic the both of you back to the Guild Hall. Here Belboz announces his retirement, and names you as the new head of the Circle! Congratulations, Sorcerer!

"Sorcerer" is copyrighted 1984 by Infocom

This walkthru is copyrighted 1984 by Scorpio o

# Pix Pro

by Jim Reiss, USA, ©1989 Asgard Software

## Introduction

Pix Pro is designed to allow you to take pictures stored in a variety of popular picture formats and convert them to another format. Since it supports 8 different load formats (so Jim claims, up-to-date I have used it to convert; Spectrum, TI-Artist Instance, TI-Artist Pictures, MacPaint, GRAPHX, Picasso, Pix, Pix 128, MAX RLE, and it saves it in 6 different formats, Pix Pro does the work of over 40 different conversion programs. Since it is entirely in assembly, it is often much faster than any other conversion program. Because it is designed to ensure the integrity of the picture, it does not have difficulties with any of the picture formats it supports, regardless of size or number of colours. How much faster you want to know? Take Spectrum to Page Pro, the old way, convert Spectrum to TI-Artist picture, TI-Artist picture to TI-Artist instance, TI-Artist instance to Page Pro, (the last step about 45min), NOW!!! Spectrum to Page Pro by Pix Pro in 35 seconds flat, That is right!!! ONLY 35 seconds, if you think that fantastic, READ ON.....

## Pix Pro Overview

Pix Pro consists of 2 separate utilities that work together, the main program (Pix Pro) which handles the vast majority of the conversions and McPix, the MacPaint converter, which converts MacPaint files into a generic, compressed format we call "Pix". It was necessary to make the MacPaint converter a separate utility because of the huge size of MacPaint pictures - there is little memory left in the computer for anything after a MacPaint file is loaded. (MacPaint is about 3 monitor screens high and up to 2 monitor screens wide).

For most conversions, simply load the main program, load in your files and then save them (or parts thereof) again in whichever format you choose. Converting a MacPaint picture is a two-step process (unless you wish to keep them in the "Pix" format) - you first must convert them to Pix and then, using the main program, convert the Pix version to whichever final format you need. Both programs offer features which make manipulating a picture easier - McPix will let you print out a MacPaint picture or convert it into Page Pro format directly, and the main program will allow you to clip and save parts of the MacPaint pictures in other formats. (e.g. TI-Artist 1 monitor screen only!!!).

The Pix format is used as an interim format for all of the pictures, even internally in the main program. Pix Pro was designed this way for a simple reason - instead of doing over 40 different conversions Pix Pro only has to do 14. If Pix Pro had to convert any of the load formats directly into the save formats, the program would have to consist of over 40 different little utilities. However, since it always converts the load formats into Pix internally, and converts the Pix file into whichever save format is chosen, it only has to have 14 or so conversions built in - all to or from Pix. This allows Pix Pro to do so much more than any other program of this type in the same amount of space.

The Pix format itself, which is also a save format, has certain advantages over other picture formats which make it an attractive format for other than a handy "way-station".

For one thing, it is quite compact. A Picasso format picture occupies 85 sectors on a disk might take only 42 when stored in Pix format. Similar space savings are found with most of the formats Pix Pro supports - many times a picture saved in Pix Pro format takes 1/2 of the disk space or less than it required in its native formats.

## Loading Pix Pro

Pix Pro has a AUTO load using Extended Basic

After Selecting Extended BASIC from the Main Menu, a small program menu will appear. Press "1" to load the main Pix Pro utility, or "2" to load the MacPaint converter McPix.

After Pix Pro loads, press any key to advance beyond the main title screen.

Pix Pro is a fairly user friendly utility that does a lot of complex things. The main prompt of the program appears after the title screen

```
... file?
```

At this prompt, enter the filename of any picture stored in the following formats: GRAPHX, TI-Artist Picture, TI-Artist Instance, Picasso, Page Pro, RLE or Pix. Some other formats load as well, but not all, most likely, but... I still have not found one yet... Remember to add any filename extension which may exist (such as the "I" part of an Instance filename (but not the /GR of a spectrum filename)), and press ENTER, Pix Pro will figure out what kind of picture you are trying to load, and will load it accordingly.

If you do not remember the filenames of your pictures, you can get a disk catalog at this and most other prompts simply by entering the device name of the disk drive you wish to catalog (for instance, to catalog disk drive two enter "DSK2." and press ENTER - note that the period is required). Pix Pro will then display a list of the contents of the disk in that drive. You simply have to press a key to return to the "Load File?" prompt.

After loading in a picture, Pix Pro will display it on the screen. At this point, there are a number of things you can do to it before saving it again. (except if there is any colouration, then it will go straight to the save option).

If you are going to be saving the picture in a colour format like GRAPHX or TI-Artist Picture formats, you may want to change the foreground and/or background colours of the picture. To do this press the "F" or "B" keys respectively - Pix Pro will go through the list of foreground and background colours accordingly.

If you want to save a portion of the picture (as a TI-Artist Instance or a Page Pro picture, for example), you have the option of just "clipping" the portion. Press "C" and a little arrow will appear on the screen. Using the Arrow Keys FCTN-E, FCTN-S, FCTN-D, and FCTN-X, move the arrow to the LEFT CORNER of the area you wish to save. Press the ] key and the arrow becomes four corners (together at this point as a little box). Now use the Arrow Keys to make the corners encompass the area you wish to save. If you made a mistake, or just do not wish to clip the picture, you press FCTN-9 to abort the clipping function at this point. After the part of the picture you wish to save is boxed in by the corner markers, press ENTER again to clip the area. You cannot abort the clip function after you have selected the area to clip.

The portion of the screen that you just clipped will be displayed on the screen. (all the other part is garbaged by Pix Pro.

After the picture has been clipped, you can press any other key to go to the save menu. If you did not clip any portion of it, you can go to the save menu by pressing any key except "C", "F" and "B". After pressing such a key Pix Pro will ask you to select one of the following save formats:



1. Artist [TI-Artist Picture format] 2 GRAPHX
3. Instance [TI-Artist Instance format]
4. Page Pro
5. Picasso
6. Pix
7. Pix 128

Note... Pix option can convert to RLE or MacPaint format.

To save in Page Pro format, for instance, press "4" on the keyboard. To display a new picture and discard the current picture (or clip the current picture), press ENTER.

After selecting the format you wish to save your picture (or clipping), Pix Pro will ask you again to enter in a disk filename and press ENTER. Pix Pro will save your picture in the specified format. After saving the picture (or clip of the picture), you will be returned to the "Load File?" prompt.

If you load in a file larger than the screen (which you probably will do quite often), a number of keys become active that let you view a portion of the picture. When the picture is larger than the screen, the screen acts as a sort of "window" on the picture. Certain keys (which will be familiar to users of TI-Writer, etc) are used for "moving" this window to different parts of the picture.

Press: FCTN-5 to move the window to the right. When you are all the way to the far right hand side of the picture, FCTN-5 will take you to the left hand side of it (will "wrap-around" in other words)

Press: FCTN-3 to move the window to the left. When the window is displaying the left side of the picture, pressing this key again will move the window to the right-hand side.

Press: FCTN-4 to move the window towards the bottom of the picture. Like the key, above, when you are at the bottom, pressing FCTN-4 again will take you to the top of the picture.

Press: FCTN-6 to move the window towards the top of the picture. Pressing this key when the window is displaying the top of the picture will move the window to the bottom of it.

In addition to the ability to shift the window on the picture in large jumps, there are a number of keys that give you finer control over the part of the picture displayed:

- : E moves the window up 8 pixels
- : X moves the window down 8 pixels
- FCTN-S moves the window to the left 8 pixels
- FCTN-D moves the window to the right 8 pixels

Being able to move the window over a specific part of the picture is very important. Some of the save formats available are limited in size to what you can display on the screen (GRAPHX and TI-Artist Picture formats for example). When you go to save the picture, the area that you are displaying in the window will be the part that is saved if you opt for one of those formats.

The windowing functions also complement the clipping function - you will often have to move the window over to the part of the picture containing what you want to clip before clipping it since the clipping function is confined to what you see on the screen.

When you are finished with this program, press FCTN-9 = to quit back to the Master Title Screen (or the M command line). For more tips using Pix Pro see the section "Pix Pro Tips" below.

#### Using McPix

The MacPaint converter McPix is a separate utility

for converting MacPaint pictures. Making it a separate utility has allowed Jim to add additional Functions, including a few we could not cram into Pix Pro itself.

After loading the MacPaint converter and advancing beyond the title screen (by pressing any key), you will be faced with the following menu:

#### Press For

- 1 Convert Mac to Pix
- 2 Convert Mac to Page Pro
- 3 Print a Mac picture
- 4 Load Pix Pro

To select an option, press the key for number of the option you wish, or press FCTN= to quit from the program altogether.

#### Option #1, "Convert Mac to Pix"

The option allows you to convert MacPaint format files into Pix format. After they are in Pix format, you can use Pix Pro itself to convert them into whichever final format you desire.

When the option is selected, you will be asked to enter in the filename of the MacPaint picture you wish to convert. As with the "Load file?" prompt of Pix Pro, you can simply enter the device name by itself to get a listing of the files on the disk on the disk in any disk drive, for example, type DSK1. and press ENTER - note the period is essential in the device name).

If you view a catalog, you will be returned to this prompt again when you press ENTER (or really any other key as well).

After entering in the filename of the MacPaint picture, McPix ask you the filename you wish to give the Pix version of it. You can press FCTN-9 at this point (or actually most points in this utility), to abort the operation and return to the MacPix menu.

After entering in your save file, McPix goes to work converting it. Please note that sometimes really big MacPaint files must be stored as 2 or 3 Pix files instead of one. McPix reduces the number of times this happens by removing any empty white space that appears around the MacPaint file, but it still happens, particularly with the really large ones. McPix saves the 2nd file with essentially the same filename, except for the last character incremented by one. For instance, if you save a really big MacPaint picture in Pix format as ".PICTURE", McPix may save it as ".PICTURE" and "PIC-----" on your disk.

After converting the picture, you will be returned to the McPix menu.

#### Option #2, "Convert Mac to Page Pro"

This option allows you to directly convert a MacPaint picture to Page Pro format, hence reducing the number of steps Page Pro owners need to take. The reason Page Pro was accorded this "honor" is simple - it is the only picture format for the TI-99/4A that can handle a picture anywhere near the size of a MacPaint picture. MacPaint pictures can be up to 576x792 pixels in size, while Page Pro pics can be 480x792. Note that MacPaint pictures that are wider than 480 pixels (which are somewhat of a rarity), will be truncated at 480 pixels.

As with the "Convert Mac to Pix" option, all white space will be removed. This option operates fundamentally the same as the option for converting to Pix format, and hence instructions and features are the same. After converting the picture, you will be returned to the McPix menu.

#### Option #3, "Print a Mac Picture"

This option is used to directly print a complete

MacPaint picture. This was included because it makes it easier for people who do not have/or use Page Pro 99 to print out a complete pic (Page Pro users can simply print out full-page pictures in Page Pro itself after converting them into that format).

After selecting this option you will be asked to enter the filename of the Macpaint picture. As with the above options, you can enter in the device name by itself to get a catalog of the disk in that disk drive (or on that RAM-drive or Hard disk drive).

After entering the filename of the picture you wish to print, you will be asked to enter the device name of your printer. Please note that this function only works with Epson or compatible printers.

Finally, after entering in the device name of your printer, you will be given 2 printing options:

Press	For
1	<u>Bit image print</u>
2	<u>Double density print</u>

Which one you choose depends on your printer. If you have one of the newer Epsoms or compatibles, you will want to select Bit image printing. Why?... This function uses a printer graphics mode much closer to that used by Macintosh computers. Pictures printed in this mode are proportional, and generally look better. If your printer does not support this mode (and the only way to find out is to try it and see if it works), you can select the Double density printing option. This printing mode will produce a picture roughly 3/4 the page width of the page and as long - this is because the MacPaint picture is only 576 pixels wide, and this printing mode makes the page 960 pixels wide. The results are certainly second best to the result under the Bit image mode.

After printing out the picture, you will be returned to the McPix menu.

#### Option #4, "Load Pix Pro".

This option allows you to go directly to Pix Pro from McPix, or actually load some other Editor/Assembler option #5 programs. Simply enter in the Disk filename and press ENTER. Pressing FCIN-9 returns to the McPix menu.

The next part of the document was typed by Jim Reiss and relates to menu #3 To load Pix (shareware program that is allowed to be put on BBS boards, but not the other programs).

Pix v1.1 Documentation- 20/9/89  
Copyright 1989 by Jim Reiss

Version 1.1 is the fourth shareware release of Pix, a program which implements a 99/4A-specific compact colour and two-tone picture storage format. The format is typically faster and more compact than RLE for two colour pictures, and the format stores the two colours involved, unlike RLE.

The specifics of the Pix format have been released and are currently available on various networks and BBSes. In general, it is a format which can be accessed randomly or sequentially and can support pictures with over 4 million pixels. This program is for 256x192 and smaller pictures only, but a commercial program, Pix Pro, is now available from Asgard Software handles larger pictures and more file formats. Contact me for details at the address given in the program. Pix should load from any E/A option 5 type loader, and after the title screen it prompts the user for a filename of a picture to display. To catalog a disk, type the disk name with no filename after the period. Pix can display Artist, Graphx, Pix, Pix 128, and RLE pictures. While the picture is on the screen, if it is a two colour picture, new foreground and background colours can be scrolled through by pressing F or B, respectively. Any other key brings you to the disposition menu.

At the disposition menu, you may press enter to load a new picture, or you may save the picture in Artist, Graphx, Pix, Pix 128, or RLE format by selecting the appropriate menu number. Pix 128 is simply Pix in D/F 128 format, provided to allow uploading to networks without an Xmodem header. Select menu option 3 (Hardcopy) and give your printer name to get a printout of the picture. Once the picture has been saved or printed, you are returned to the load picture prompt.

Users are encouraged to distribute this program freely. If you find this program useful, please send \$10 or more to the address given on the title screen. Fairware contributions will encourage further development of this program, and help out a struggling TI programmer. To date no contributions have been received. Please distribute this file with the program.

#### Pix Pro Tips

If you want to make multiple clips from a large picture, you will want to save the whole thing in Pix format first. Pictures load fastest if they are in Pix format. Reloading the picture each time after clipping it will be much less time consuming (and with a RAM-drive practically unnoticeable except for the very large pictures). Why does the program not allow you to simply re-display the picture after clipping a part of it and saving it? This has much to do with the current memory limitations. Perhaps a future version of Pix Pro will eliminate this problem.

Loading a picture can be time-consuming because some formats take longer than others to convert into Pix format for internal storage because of the way they are stored, and of course because of the size of pictures varies between formats.

Selecting the TI-Artist or GRAPHX options on the save menu can be used to dump 256x192 sections of a large picture without clipping. Whatever was on the screen before going to the save menu will be stored in a TI-Artist or GRAPHX file.

When loading TI-Artist Pictures you do not have to enter the filename extension (the "\_P" and "\_C"). Pix Pro will add it if necessary. But it will require the extension for a TI-Artist Instance (as they can be any size from 3 sectors up in size). Pix Pro will also add the "\_P" and "\_C" to a filename if you save a picture in TI-Artist Picture format, as well as the "\_I" if you elect to save it in TI-Artist Instance format. o

## From the Bulletin Board

MAIL TO : EDITOR  
MAIL FROM : SUTHERLAND  
SENT ON Monday 07/05/90 at 15:57:13  
SUTHERLAND REGIONAL GROUP

It is nice to see that the task of Editor of TISHUG continues to be in good hands. Congratulations to Bob Relyea and the Illawarra team who continue to turn out a great product.

I have not submitted a Regional report for some months and felt it was the least I could do to contribute. It is suggested that other Regional co-ordinators also continue to make the effort, as there has been a gradual drop-off in this area in past months.

The April meeting was extremely small due to the absence of most members on Easter holidays at that time. Nevertheless Ron Stewart and myself spent some time running through the features of TI Writer v4.4.

Page Pro appears to be the next software offering which will command our attention.

All meetings are held on the third Friday of each month at 51 Jannali Avenue, Jannali unless otherwise advised. o

# BOOT

## A Versatile Load Program by Mike Slattery

Hands up all those with one of Peter Schubert's AT disk controller cards who have never used a program called BOOT(or Menu). These programs were originally written for the Horizon Ramdisk but with an AT disk controller card can be used as a great LOAD program via Extended Basic. The usefulness of the program can be seen when you realise this program can be used to load and run XB programs, Editor Assembler(option 5) programs and DIS/FIX 80 (option 3) auto and non auto start programs. About the only programs it cannot be used to run are Basic programs.

To auto load BOOT, save the following XB program to your disk under the name LOAD.

```
100 DELETE "XILR" :: CALL LINK("RUN") ("DSK1.BOOT")
```

Then copy the program BOOT plus a program CHARAL to your disk. If your program name is MENU then change BOOT to MENU in the program above.

For those not familiar with BOOT, the program is used as follows: On loading, the main menu is displayed showing the numbers 1 to 9 and the letter "C". Pressing the space bar shows a second page also with the numbers 1 to 9 and "C". Press the space bar again to return to the main menu.

### 1 SHOW DIRECTORY

This is the disk catalog and file section option. Press 1 and then use the drive number to catalog. All files on the disk are displayed. Use the space bar to tab down to select the program to run. Press ENTER to return to the main menu and then 3 followed by ENTER to run the program. Any XB or EA program will be run. DIS-FIX 80 programs cannot be run by this method. To print the disk catalog press SHIFT 1 and enter the drive number.

### 2 DISPLAY A FILE

This option reads any DIS/VAR 80 file on disk. You can access this option in two ways.

(a) Catalog the disk and select the file to be read as described above. Press 2, then ENTER. The file will be printed to screen. To print out the file press SHIFT 2 then ENTER.

(b) Alternatively if you know the filename to read simply press 2 and type in the drive number and filename then press ENTER.

### 3 RUN A PROGRAM

Simply enter the drive number and filename at the prompt and press ENTER.

### 4-9 (Main Menu) and 1 - 9 (second Menu)

Using these numbers you can pre-load into BOOT your favourite program names and run them with the press of one number. To do this press FCIN 5. The menus change to an editable screen. Type in the name you want to appear on the BOOT screen on the first line and press ENTER. On the second line enter drive number and program name thus: DSK1.MGR1. Repeat this for as many programs as there is space, or until you have entered all your programs. When finished entering your selections, press FCIN 9 and then ENTER. Your new screen will be saved back to disk for booting next time.

NOTE: When entering the name to appear on the BOOT screen, you are not restricted to 10 letters and no spaces. Thus for DM 1000 you could use the Disk Manager 1000 as the menu identifier.

### C TI EXTENDED BASIC

Pressing C is the same as selecting EXTENDED BASIC from the initial menu when the computer is turned on.

This means the C option loads in EXTENDED BASIC and then searches drive 1 for LOAD. This can be slow especially if you forget to interrupt the LOAD program and it boots another unwanted program. I speed this up by saving the following program to disk under the name XB.

```
100!
```

Then I use the program select option to run this program. As it is extremely short it loads XB very quickly.

### B BASIC

This is not shown as an option but is available and simply loads in Basic.

Unfortunately you are not able to run DIS/FIX 80 programs from the BOOT menu but must use an XB loader as follows:

```
100 DELETE "XILR" :: CALL LINK("LR")("DSK1.PROGRAM  
NAME") :: CALL LINK("LLR")("RUN NAME")
```

Save this to disk under an appropriate name after entering the correct program and run names. Load the program name you saved it under onto to one of the BOOT menu options and this will then run the specified E/A DIS/FIX 80 program. You could, of course, simply OLD and RUN the XB program if that was all you wanted to run but it can be much easier to run it from a menu.

If you are unsure how to do any of the above instructions correctly, please contact your local regional group (listed on the back page of the TISHUG NEWS DIGEST). Someone there will be happy to assist you. After all, that is what regional groups are for. o

## Changing colours in the E/A

by Terry Atkinson, NS Canada

Some time ago, Tom Freeman provided me with a method whereby the colour defaults on the EA EDIT 1 program could be changed by using the TI-FORTH disk-fixer. Not being "handy" with using this elusive (to me) language, I decided to attempt to accomplish the same end by using a standard disk-fixer. It worked!!

Why change the colours? Well, some of us are using green/orange monitors, or black white TVs and white letters on a blue background do not show up that well. Others may just want a change.

The theory provided by Tom, is that every bit of memory space is required by the editor program and data generated by the user. Hence, he used an area of the program utilized by TI to display their copywrite. In this space, he wrote a little assembly language sub-utility to produce the colour change, and is, in essence, a VWTR to change vdp reg 7.

### HOW TO DO IT

First, transfer the EDIT1 file over to a freshly initialized disk. Then boot up your favourite disk fixer. If you do not have one, DISKO, the TI In-house disk fixer is available from the TINS library for a nominal charge(although use of that version will not coincide exactly with what I am about to put forth).

Once the fixer is booted up, call in sector 22. This sector is headed by words; 0000 1700 2000 55AA. Ensure you got the right sector. Now locate the word at 0024. It should read 2843. Using the (A)lter command, change this, and the next consecutive 15 words to read:

```
2020 C800 C01E 0200 8717 06C0 D800 8C02 06C0 D800  
8C02 C020 201E C020 DDD8 045B
```

Write sector 22 back to disk, and call in sector 24. This sector is headed by words; 0014 0420 2D82 1000. Again, check to ensure you have the proper sector

continued on page 4

# The TI Learning Machine

by M. Amundsen, OH USA

Below is a program that actually learns from the user! This program uses a binary search tree routine to ask you questions, look into it's "memory" for an answer and respond accordingly.

It is a great program for children (they get to "teach" the computer, not the other way around!) and it is an excellent example of the use of subroutines and the binary search tree.

## Teaching the Learning Machine

The Learning Machine can only learn by asking questions. The first time you ever run The Learning Machine, you have to give it the first answers. After that, Learning Machine will build upon each new bit of information you give it. Below is a sample session with The Learning Machine:

1) At the Main Menu select <B> for Begin Session.

2) Answer N to the question "Is a file in memory?"

3) At the next menu select 2 to start a new file.

4) The Learning Machine learns to recognize something through a single distinguishing characteristic. In this session we will teach the Learning Machine about books. At the first prompt type "A Novel" for the first characteristic.

5) At the next prompt type the answer "Oliver Twist." The machine is now ready to start learning new items.

6) The Learning Machine will now ask you a question: "Is it a novel?" For now answer NO.

7) Since the Learning Machine knows of no other books, it gives up and asks you for the correct answer. This time type "Starting FORTH."

8) When it asks you for the distinguishing characteristic, type "about computers."

9) Continue this process until you have amassed a good body of questions (at present the Learning Machine can only keep track of 50 answers - change this in line 450 if you wish!).

10) To end a session just select <E> at the Main Menu and save your file to disk or cassette.

```
100 REM *****
110 REM *
120 REM *   T H E   *
130 REM *
140 REM * L E A R N I N G *
150 REM *
160 REM * M A C H I N E *
170 REM *
180 REM *****
190 REM
200 REM   TI-BASIC
210 REM
220 REM   M AMUNDSEN
230 REM   TOLEDO, OH
240 REM   7/8/84
250 REM
260 REM *****
270 REM *VARIABLES*
280 REM *****
290 REM
300 REM   A$-ANSWER
310 REM   C$-CHARACTERISTIC
320 REM   Q1$-QUEST HEADER
330 REM   Q2$-QUEST TAIL
340 REM   T1$-TEMP$
350 REM   T2$ TEMP$
```

```
360 REM   LL-LEFT LINK
370 REM   RL-RIGHT LINK
380 REM   P-ARRAY POINTER
390 REM   N-# OF ITEMS
400 REM
410 DEF TABR=29-LEN(M$)
420 DEF TABC=(28-LEN(M$))/2
430 Q1$="IS IT "
440 Q2$="?(Y/N)"
450 DIM C$(50),A$(50),LL(50),RL(50)
460 REM
470 CALL CLEAR
480 CALL SCREEN(6)
490 FOR L=1 TO 12
500 CALL COLOR(L,16,1)
510 NEXT L
520 REM
530 REM *LOGO*
540 REM
550 FOR X=133 TO 143
560 READ X$
570 CALL CHAR(X,X$)
580 LOGO$=LOGO$&CHR$(X)
590 NEXT X
600 DATA 3C4299A1A199423C,6324242320202473,
OC92928C9292920C,1010505078101038,6094F79494949090
610 DATA 0000679494170404,00001C91911C,
0304E21111E10106,000039444438,4088DC8888888804
620 REM
630 REM *****
640 REM *TITLE SCREEN*
650 REM *****
660 REM
670 REM
680 FOR L=1 TO 14
690 READ M$
700 PRINT TAB(TABC);M$
710 NEXT L
720 DATA T H E , , L E A R N I N G , , M A C H I N E , , , , , ,
730 REM
740 CALL HCHAR(8,7,42,19)
750 CALL HCHAR(16,7,42,19)
760 CALL VCHAR(9,7,42,7)
770 CALL VCHAR(9,25,42,7)
780 M$=LOGO$
790 PRINT TAB(TABC);M$::
800 GOSUB 3800
810 REM
820 REM *****
830 REM *MAIN SUPERVISOR*
840 REM *****
850 REM
860 CALL CLEAR
870 PRINT "SELECT ONE"::::
880 PRINT TAB(7);"<B>EGIN SESSION"::::TAB(7);"<L>IST
ITEMS"::::TAB(7);"<I>NSPECT FILE"::::TAB(7);
"<E>ND SESSION"::::
890 XR$="BLIE"
900 GOSUB 3710
910 ON XR GOSUB 960,1120,1230,1340
920 GOTO 860
930 REM
940 REM *BEGIN SESSION*
950 REM
960 CALL CLEAR
970 PRINT "IS A FILE IN MEMORY?(Y/N)"::::
980 GOSUB 3960
990 IF XR=1 THEN 1070
1000 PRINT "SELECT ONE"::::TAB(5);"1 - OPEN OLD FILE"
:::TAB(5);"2 - START NEW FILE"::::
1010 XT=2
1020 GOSUB 3880
1030 IF XK=1 THEN 1060
1040 GOSUB 3490
1050 GOTO 1070
1060 GOSUB 2900
1070 GOSUB 1480
1080 RETURN
1090 REM
1100 REM *LIST ITEMS*
1110 REM
1120 CALL CLEAR
1130 PRINT "USE FILE IN MEMORY?(Y/N)"::::
1140 GOSUB 3960
1150 IF XR=1 THEN 1180
```

```

1160 GOSUB 3170
1170 GOSUB 2900
1180 GOSUB 2290
1190 RETURN
1200 REM
1210 REM *INSPECT FILE*
1220 REM
1230 CALL CLEAR
1240 PRINT "USE FILE IN MEMORY?(Y/N)":::
1250 GOSUB 3960
1260 IF XR=1 THEN 1290
1270 GOSUB 3170
1280 GOSUB 2900
1290 GOSUB 2570
1300 RETURN
1310 REM
1320 REM *END SESSION*
1330 REM
1340 GOSUB 3170
1350 PRINT ::"CONTINUE THE SESSION?(Y/N)":::
1360 GOSUB 3960
1370 IF XR=1 THEN 860
1380 REM
1390 PRINT :::"PROGRAM TERMINATED":::
1400 FOR L=1 TO 500
1410 NEXT L
1420 CALL CLEAR
1430 END
1440 REM *****
1450 REM *TAKE A GUESS*
1460 REM *****
1470 REM
1480 P=1
1490 CALL CLEAR
1500 PRINT "LEARNING SESSION":"=====":::
1510 REM
1520 REM CHARACTERISTIC
1530 REM
1540 M$=Q1$&C$(P)&Q2$
1550 GOSUB 4080
1560 GOSUB 3960
1570 IF XR=1 THEN 1750
1580 REM
1590 REM WRONG
1600 REM
1610 IF RL(P)=999 THEN 1680
1620 P=RL(P)
1630 PRINT ::
1640 GOTO 1540
1650 REM
1660 REM I GIVE UP!
1670 REM
1680 GOSUB 2060
1690 RL(P)=N+1
1700 GOSUB 2180

1710 GOTO 2000
1720 REM
1730 REM ACTUAL ITEM
1740 REM
1750 PRINT :::
1760 M$=Q1$&A$(P)&Q2$
1770 GOSUB 4080
1780 GOSUB 3960
1790 IF XR=1 THEN 1970
1800 REM
1810 REM WRONG
1820 REM
1830 IF P=LL(P) THEN 1900
1840 P=LL(P)
1850 PRINT ::
1860 GOTO 1540
1870 REM
1880 REM I GIVE UP!
1890 REM
1900 GOSUB 2060
1910 LL(P)=N+1
1920 GOSUB 2180
1930 GOTO 2000
1940 REM
1950 REM CORRECT!
1960 REM
1970 PRINT :::". . . I THOUGHT SO!":::
1980 FOR L=1 TO 500

1990 NEXT L
2000 RETURN
2010 REM
2020 REM *****
2030 REM *LEARN NEW ITEM*
2040 REM *****
2050 REM
2060 CALL CLEAR
2070 PRINT "I GIVE UP!":"=====":::
2080 PRINT "WHAT IS THE ANSWER?":::
2090 INPUT T1$
2100 PRINT :::"I SEE...":::"WHAT'S DISTINGUISHES"::T1$:
"FROM"::A$(P);"?":::
2110 INPUT T2$
2120 RETURN
2130 REM
2140 REM *****
2150 REM *UPDATE LINKS*
2160 REM *****
2170 REM
2180 N=N+1
2190 C$(N)=T2$
2200 A$(N)=T1$
2210 LL(N)=N
2220 RL(N)=999
2230 RETURN
2240 REM
2250 REM *****
2260 REM *LIST ITEMS*
2270 REM *****
2280 REM
2290 CALL CLEAR
2300 PRINT "LIST FILE":"=====":::
2310 PRINT "WANT A PRINTOUT?(Y/N)":::
2320 GOSUB 3960
2330 IF XR=0 THEN 2380
2340 PRINT "ENTER DEVICENAME":::
2350 INPUT DN$
2360 DN=1
2370 OPEN #DN:DN$
2380 FOR L=0 TO DN
2390 PRINT #L:"THE FOLLOWING ITEMS ARE IN":"THE FILE:
";FN$:
2400 NEXT L
2410 FOR L=1 TO N
2420 FOR L2=0 TO DN
2430 PRINT #L2:A$(L)
2440 NEXT L2
2450 NEXT L
2460 IF DN=0 THEN 2490
2470 CLOSE #DN
2480 DN=0
2490 PRINT :::
2500 GOSUB 3800
2510 RETURN
2520 REM
2530 REM *****
2540 REM *INSPECT FILE*
2550 REM *****
2560 REM
2570 CALL CLEAR
2580 PRINT "INSPECT FILE":"=====":::
2590 PRINT "WANT A PRINTOUT?(Y/N)":::
2600 GOSUB 3960
2610 IF XR=0 THEN 2660
2620 PRINT "ENTER DEVICENAME":::
2630 INPUT DN$
2640 DN=1
2650 OPEN #DN:DN$
2660 FOR L=0 TO DN
2670 PRINT #L:"THE FOLLOWING ITEMS ARE IN":"THE FILE:
";FN$:
2680 NEXT L
2690 FOR L=1 TO N
2700 FOR L2=0 TO DN
2710 PRINT #L2:" L -";L
2720 PRINT #L2:"C$(L)-";C$(L)
2730 PRINT #L2:"A$(L)-";A$(L)
2740 PRINT #L2:" LL -";LL(L)
2750 PRINT #L2:" RL -";RL(L)
2760 PRINT #L2:
2770 NEXT L2
2780 NEXT L
2790 IF DN=0 THEN 2820

```

```

2800 CLOSE #DN
2810 DN=0
2820 PRINT ::
2830 GOSUB 3800
2840 RETURN
2850 REM
2860 REM *****
2870 REM *OPEN FILE*
2880 REM *****
2890 REM
2900 CALL CLEAR
2910 PRINT "LOAD FROM:":::TAB(5);"1 - DISK":::TAB(5);
"2 - CASSETTE":::::
2920 XT=2
2930 GOSUB 3880
2940 IF XK=2 THEN 2980
2950 INPUT "FILENAME: DSK":FN$
2960 FN$="DSK"&FN$
2970 GOTO 2990
2980 FN$="CS1"
2990 OPEN #1:FN$,SEQUENTIAL,INPUT ,INTERNAL,FIXED 192
3000 PRINT :::TAB(7);"LOADING FILE..."
3010 REM
3020 REM GET DATA
3030 REM
3040 INPUT #1:N
3050 FOR L=1 TO N
3060 INPUT #1:C$(L),LL(L),A$(L),RL(L)
3070 NEXT L
3080 CLOSE #1
3090 PRINT :::"THERE ARE";N:"RECORDS ON FILE.":::
3100 FOR L=1 TO 500
3110 NEXT L
3120 RETURN
3130 REM *****
3140 REM *SAVE FILE*
3150 REM *****
3160 REM
3170 CALL CLEAR
3180 PRINT "SAVE THIS FILE?(Y/N)":::::
3190 GOSUB 3960
3200 IF XR=1 THEN 3220
3210 GOTO 3430
3220 PRINT "SAVE TO:":::TAB(5);"1 - DISK":::TAB(5);"2
- CASSETTE":::::
3230 XT=2
3240 GOSUB 3880
3250 IF XK=2 THEN 3290
3260 INPUT "FILENAME: DSK":FN$
3270 FN$="DSK"&FN$
3280 GOTO 3300
3290 FN$="CS1"
3300 OPEN #1:FN$,SEQUENTIAL,INTERNAL,OUTPUT,FIXED 192
3310 PRINT :::TAB(7);"SAVING FILE..."
3320 REM
3330 REM SAVE DATA
3340 REM
3350 PRINT #1:N
3360 FOR L=1 TO N
3370 PRINT #1:C$(L),LL(L),A$(L),RL(L)
3380 NEXT L
3390 CLOSE #1
3400 PRINT :::"THERE ARE NOW";N:"RECORDS ON FILE.":::
3410 FOR L=1 TO 500
3420 NEXT L
3430 RETURN
3440 REM
3450 REM *****
3460 REM *START NEW FILE*
3470 REM *****
3480 REM
3490 CALL CLEAR
3500 PRINT "START NEW FILE":"=====:::::
3510 PRINT "ENTER FIRST CHARACTERISTIC:":::
3520 INPUT C$(1)
3530 PRINT :::"ENTER THE FIRST ANSWER:":::
3540 INPUT A$(1)
3550 LL(1)=1
3560 RL(1)=999
3570 N=1
3580 PRINT :::
3590 GOSUB 3800
3600 RETURN
3610 REM

```

```

3620 REM *****
3630 REM *
3640 REM * SUBROUTINES *
3650 REM *
3660 REM *****
3670 REM
3680 REM
3690 REM *KEY-LET/B*
3700 REM
3710 CALL SOUND(150,1400,0)
3720 CALL KEY(0,XK,XS)
3730 IF XS=0 THEN 3720
3740 XR=POS(XR$,CHR$(XK),1)
3750 IF XR=0 THEN 3720
3760 RETURN
3770 REM
3780 REM *KEY-CON/B*
3790 REM
3800 PRINT " PRESS ANY KEY TO CONTINUE "
3810 CALL SOUND(150,600,5)
3820 CALL KEY(3,XK,XS)
3830 IF XS=0 THEN 3820
3840 RETURN
3850 REM
3860 REM *KEY-NUM/B*
3870 REM
3880 CALL SOUND(150,1000,0)
3890 CALL KEY(3,XK,XS)
3900 IF (XK<49)+(XK>XT+48)+(XS=0)THEN 3890
3910 XK=XK-48
3920 RETURN
3930 REM
3940 REM *KEY-ANS/B*
3950 REM
3960 CALL SOUND(150,800,0)
3970 CALL KEY(3,XK,XS)
3980 IF XS=0 THEN 3970
3990 IF XK<>89 THEN 4020
4000 XR=1
4010 GOTO 4040
4020 IF XK<>78 THEN 3970
4030 XR=0
4040 RETURN
4050 REM
4060 REM *WRAP/B*
4070 REM
4080 X1=0
4090 M$=M$&" "
4100 X2=POS(M$, " ",X1+1)
4110 PRINT SEG$(M$,X1+1,X2-X1);
4120 IF X2=LEN(M$)THEN 4150
4130 X1=X2
4140 GOTO 4100
4150 RETURN

```

## For Sale

Fully expanded system for sale comprising Console, XB module, PE box with MFC DDENS controller, drive, RS232, PIO all in good order and asking just \$500.  
Phone David Corney on 047 392535 A.H.

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only accelerating us towards that unfortunate end by sucking away our limited finances. Let us cut loose now while there is still time.

Would it not be of much more benefit to this club to utilize its funds to purchase software, the only real reason for owning a computer in the first place?

There may be other areas where money could be saved, but I am sure that most of these have already been addressed by the current directors. So, do not just sit back and leave things the way they are. Voice your opinion to one of the directors. Let us have an extra-ordinary meeting, or whatever it takes, and relieve us of this unnecessary burden.

Lou Amadio

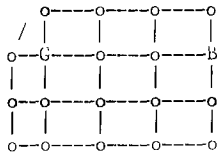
# Games Info

by Robert Brown

This month we continue our solution to Spellbreaker. Here it goes...

REZROV the alabaster plug and go west. The cube is "no place".

BLORPLE the "no place" cube. Go south to the Plain. Give the green-eyed rock the lava fragment to eat. It will then allow you to climb on its back and will go in the direction you tell it. The lines make a playing grid like so:



If you go north then south west and keep track of the moves of both yourself and the brown-eyed rock, you should have no trouble in catching him up.

Jump onto his back from the green rock's back and take the cube. This is the "dark" cube.

BLORPLE the "dark" cube. Go down to the Dark Cave. Learn SNAVIG.

Drop the knife or whatever is providing the light and go down again to the Grue Cave. SNAVIG the grue. Now you can slaver too.

Enter the light pool and climb on the pillar. Take the cube. This is the "fire" cube. Go back through the pool and up to the Dark Cave. Take the knife and wait until you come back to your own shape.

BLORPLE the "fire" cube. Go north to the volcano. This is where you need the magic cube box. You will probably have noticed that its pattern changes to correspond to the cube that was last put in it. It also has another property which is not at all obvious. If you leave the gold box somewhere and then BLORPLE the cube that was last in it, you will be able to go through the exit that you normally cannot force your way through and it will lead to whatever room the gold box is in. Make sure the gold box does not have a cube in it and throw it onto the outcropping. BLORPLE the last cube that was in it, the one to which it is tuned. Go through the opening through which you normally cannot force your way and you will be on the outcropping with the gold box. Take the box and the new cube. This is the "magic" cube. You now have 12 cubes and your magic powers are much stronger.

BLORPLE the "noplace" cube. Go East to the inner vault. You can now REZROV the door and go north to the outer vault. Make sure you have a BLORPLE learned.

You are looking for a cube that is more magic than the others. It only shows in the piles.

JINDAK. You now know which pile it is in.

Exchange three cubes in one pile for three cubes in the other, JINDAK again.

You now know the cube you want is one of only three.

Distribute the piles so that each has 4 cubes that you know are not the one you want, and one of the three possibles. Hold the other possible. JINDAK.

If one of the piles is brighter it has the cube you want. If they are both the same the cube you are holding is the one.

You will just have time to BLORPLL the new cube before the guards get you. You are in the Sand Room.

Go down. You are in the dungeon cell at a time before the time you were in it previously. Open the cabinet with the key, take the blank scroll.

Now learn BLORPLE a couple of times and put the spell book in the cabinet. Close and lock the cabinet. REZROV the door of the cell in order to leave it exactly as you will have found it.

BLORPLE the latest cube to get to the Sand Room again. Take the burin and the blank scroll out of the zipper, and then go up to the Ruins Room. You are still in a previous time.

Open the sack and write the GIRGOL spell from the flimsy scroll onto the spell scroll.

Put the flimsy scroll into the zipper. Now transfer everything but the flimsy scroll from the zipper to the sack. Close the zipper and drop it, thus leaving it for yourself to find in the earlier part of the game.

BLORPLE the magic cube. You can now go East into the Castle. Take out the spell scroll.

Relax and enjoy yourself while the shadow explains to you what is going on. After the move in which he reveals his face (I think it is two moves before the one in which he would paralyse you anyway) attack him. He will paralyse you. You will recover as he is about to jump into the tesseract. GIRGOL. Remove the magic cube from the centre of the tesseract and replace it with the sack.

## SOME NOTES

Barsap, Royal Magician - turned into a newt 972 "The hardest trick is making it look easy", first performed before royalty 850. Appointed Royal Magician 875. Greatest skills - juggling and creative accounting. Guild membership revoked for dues evasion, 960. Last book read: Magic with mirrors" Double Fanucci handicap 19.

Berknip, oldest active necromancer- (662-750, 841-present) "No one weeps for a necromancer". Survived by 7 children and 39 grandchildren in 750 G.U.E. (he has since out-relived them). Greatest skill - assisting historical biographers. Hobby - antiques (making and collecting). Inexplicably afraid of swords and powdered milk. Vegetarian (adapted nitfol spell for raw oysters and crispy whole fish). Double Fanucci handicap - unmeasurable.

Dimithio of Borphee "the cheerful sorcerer" (Founder of the Borphee enchanter's guild). "Magic does not have to be great to be useful, nor does magic have to be useful to be great." Studied under Yooman, the Musician Mage. Animal lover (adapted nitfol spell for egg-laying mammals). Tremendously well read and good natured. Greatest skill - fireworks displays. Despised by Holnac the Cynic. Double Fanucci handicap: 127.

Gustar Woomax, Chronicler of Magic. "If history can teach us the difference between good and bad magic, it can teach us anything". Author of "A Brief History of magic", "Bizboz at Galepath", "Mage versus Archmage", "Revenge of the Dornbeasts", "The Granola Riots" (Co-authored by Wilbar Memboob) and "The Coconut of Quendor: Reality or Illusion?". Born in Greater Borphee, 880. Attended G.U.L. Tech, 907-911. Favourite author - Bizboz. Greatest skill - none known. Double Fanucci handicap: 620.

Barbel of Gurth, Arbiter, Diplomat. "When I was a boy I was told any enchanter could become a Guildmaster. Now I am beginning to believe it." Son of Delborm advisor to Lord Dimwit Flathead. Inventor of the goimac spell. Guildmaster of Gurth City chapter since 933. President of GAC (Gurth Arbiters Congress). Greatest

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# Rambles

by Stephen Shaw, England

Welcome to another issue of Rambles, and another new year, now more than ten years since our computer first saw the light of day, and still excellent new programs are being produced (eg TI ARTIST PLUS!).

Rambles is based on any letters or queries received, and if you do not write to me, it is based on what I am doing with my computer at the time of writing... there is so much still to do with this computer. People changing to other computers have different needs to me, and may perhaps not spend so much time programming- or perhaps they spend more time trying to come to grips with rather less friendly operating systems and languages.

Write to me! Queries - and articles- from console only users are very welcome!

BASIC...

To find a SQUARE ROOT you would use SQR, eg PRINT SQR(4) produces 2.

How about a CUBE root or higher?

If you type: PRINT 4^0.5 you will get 2, and similarly if you type PRINT INT(8^0.333333+.00001) you will get 3.

To find an N root you need to use the form ROOT=NUM^(1/N), remembering to take account of small inaccuracies in the binary math!

Speaking of binary math, one aspect of Basic not exactly covered in your manuals is the use of AND in a compacted data type situation.

Let us say we have a user group whose members have different items of equipment. Lets allocate powers of two to each item of equipment:

```
CONSOLE = 0
EX BAS = 2
32K = 4
SSSD DISK= 8
DSSD DISK=16
PIO =32
MODEM =64 and so on and so on up to 32k.
```

Now add up the values of the items of equipment each member has, and obtain a total. We can find out from that total- which occupies only 8 bytes! -by use of the AND operator, thus:

```
INPUT "MEMBER TOTAL:":TOTAL
IF TOTAL AND 2 THEN PRINT "MEMBER HAS EX BAS"
IF (TOTAL AND NOT 4)=TOTAL THEN PRINT "MEMBER DOES NOT HAVE 32K RAM"
```

Get the idea? Try it out!

The magazine ACE has nothing for the TI99/4a, but does have some game ideas, and reviews games which just might appear for the 4a, such as the Russian game TETRIS, which we have in our library as TITRIS in ExBas. Described in Ace as follows..."A fascinating geometrical oddity, this Russian puzzler turns the obscure mathematical topic of packing into a cult game. One at a time, shapes fall downwards into a rectangular playing area. Left to their own devices they will pile up until they reach the top of the screen; your task is to guide them down and pack them tightly so that does not happen.... the brilliantly simple idea... means... well worth a look whatever your machine".(We in fact have two versions - TI Tris and Tetris, take your pick!).

Also listed as "Classics" are Scrabble and Lurking Horror, both of which we have available on disk only- Lurking Horror requires a double sided drive. You must know Scrabble! Lurking Horror is an Infocom text only adventure (never released for the TI) and Ace writes "Infocom's tribute to H.P. Lovecraft and the horror-fantasy genre sends you into a cold sweat as you discover something very nasty lurking beneath your

college laboratory. Superb text-only game that defies you to play it after dark..."

TEST 4

For those of you who like a little something to program, a slightly modified puzzle, taken from Ace Magazine...

How do you make five REFs FREE? eg REF + REF + REF + REF + REF = FREE? When you replace each letter with a digit, so that it reads:

251 + 251 + 251 + 251 + 251 = 1255.

Get the idea?

Good. Now, what are the digits involved in order to make 18 REF's FREE? Now something a little harder! There is another puzzle, involving a different number of REFs which still make FREE. How many REFs in this one!?

Programs to solve this (with answers!) to Stephen please!

TEST 5

Like puzzles? OK here is another...

Make a circle of fifty apples say, and to make life easier let us say one of them is at the 12 O'clock position which we shall call position ONE for reference purposes! Starting at position one and counting clockwise, remove every tenth apple, continuing to count and remove until only TWO apples are left. What are these positions?

Suppose we have 49 apples to start with, and do the same thing, what are the final two positions?

Write a program to determine the answers to these two questions. Now try a generic program which allows you to input any number of apples and will yield the final two positions. Thats test one! Which we can divide into two sections- fast in section one, and graphic with bells in section two!

Test two is to take a dozen different inputs to your generic program and see if you can determine any pattern which would allow you to speed up your program- so it does not actually have to go round and round removing the apples! IS there a pattern? If you find one, write it into a program and test it against the first program with another dozen different number of apples!

Programs- for ANY section! - to Stephen please. Submitted by an Australian member. Any UK members out there?)

TI BASE

Having spent five months indexing TI\*MES, I then set about right justifying the page numbers by adding a zero in front of single digits, as follows:

```
REPLACE PAGE WITH "01" ;FOR PAGE = "1"
```

I made the drastic mistake of not using a copy file, and the jolly thing went and changed all pages 1,10,11,12,13...19 to 01. End of index to TI\*MES for a little while...

Moral:

Never assume any program acting on a file is going to work as you think it will- always use a copy file and retain your original file for some time! REMEMBER- when using TI Base, the comparison is with the first N letters only, where N is the length of the test string. THUS I should have used:

```
REPLACE PAGE WITH "01" ;FOR (PAGE="1") .AND. (PAGE<"10")
```

MYARC EX BAS DIFFERENCE...

Well, hardly a bug, as it seems an improvement on TI Ex Bas handling. I have been running and developing a domestic program in Myarc XB for quite some time. Running it in TI XB the other day I came across an error message I was not expecting. A little experimentation showed why. In TI XB, when you type PRINT VAL("") you get an error. In Myarc XB, when you type PRINT VAL("") you get 0, which is much better when you are dealing with disk data files.

The index to the first 26 issues of TI\*MES has 1000 items listed! and takes up a fair bit of paper when printed out. Readily available on disk either in TI Base format for TI Base owners! or I MAY be able to produce a DV80 text format, but I am not too sure about



a printed format due to cost. Older members will not be too surprised (or indeed may be very surprised?) to learn that from the entire five copies of TIHUC Newsletter, I managed to find 36 entries for an index!

#### CORRECTION. ISSUE #17.

Yes yes, that was all a long time ago, it just takes you that long to key programs in and tell me they will not work. This could win a prize for the longest time taken to find and squash a bug?

Back in March 1985 Lehigh 99ers published a program based on my articles in TI\*MES Issue 6, and this was reprinted in the Sydney Group Newsletter in October 1985. It finally made it to TI\*MES 17, and can be found on Page 58. It is a music program with no Call Sounds, and only 5 CALL LOADS. One error seems to have occurred in paste-up, the other I cannot explain. Here are the lines to change:

```
590 DATA 0295D2010491DOAD1101
1120 DATA 04FF9FBDFE0
```

THE PROGRAM WILL NOW RUN CORRECTLY. Remember to press ENTER when the blinking cursor appear around screen top left!

Our 1989 AGM was attended by a rep of the Ottawa group. Know what he said about us- no new UK software. The UK is firmly identified as a TAKING country, giving little back to the world of 99ers. Is ANYONE programming ANYTHING in the UK? Some of our most famous programs are XB so do not be shy. Internationally Ron Johnson continues to be remembered for his Roman War Game program - though few UK users have looked at it. CARFAX ABBEY is another UK export. And of course the Billy Ball programs formerly from Stainless. All ExBas. Machine code is nice but not essential. Good ideas and lots of work are needed!

Unless you caught Tomorrows World, you may have missed TI's latest innovation, as they paid POUNDS 2.50 PER COPY to advertise in a US magazine with a circulation of 200,000.... yes folks, the first TALKING MAGAZINE ADVERT, with fifteen seconds of speech to advertise a talking chip. The advert is said to have repeated itself 650 times before the battery ran out- a little over two and a half hours of continuous synthesised speech! Sadly I could not find a copy of the magazine.

#### CORRECTION: TI SORT.

In the last issue I made the assumption that as TI SORT was so very similar to SORT1 both in timing and specification, it was in some way derived from it. I have checked this out with TI SORT author Dennis Faherty, and I fully accept his claim to have written TI SORT entirely from scratch. The very close similarity to SORT1 is merely a coincidence of two good programmers having similar ideas! Apologies.

#### TI SORT

"The actual sort algorithms were based on a QUICK SORT method described by C A R Hoare in a book titled "Fundamentals of Data Structures" by Horowitz. The file handling methodology is a variation of creating multiple sorted files and merging them into the final output. The variation is that a single fixed file is used with sections of this file representing the multiple files. With the limitation imposed by TI on the number of files to have open concurrently, this seemed like a reasonable variation. It is also designed specifically for TI-BASE files, with other record types also being considered, to make it as generically useful as possible. It was obvious even before TI-BASE was first released that it would probably need a supplemental sort program for data bases of any large size, and I had planned TI-Sort at that time."

Sorting TI BASE files with TI SORT is indeed a very easy and simple doddle, you do not really need the manual! The AID key is functional with help windows throughout, should you need them. Just one tiny niggle- when selecting the order of nesting, when sorting on more than one field, the order number is placed at screen left, and is not visible on my tv! Such screen echoing of input is not absolutely needed though. When

sorting TI BASE data, TI SORT accesses the Structure file, and lists the fields for you to select from. And off it goes, making use of an intermediate file, rewriting the old file OR making a separate file if you prefer.

As with SORT1, use of a RAM disk makes life a lot easier, else use of different disk drives speeds things up- eg intermediate file on a different drive to the input/output files.

TI SORT can cope-subject to your media limitations!- with up to 32767 records. ALL sizes of TI Base records are supported, but non-TI Base data is limited to 255 byte records or under. MAXIMUM 17 FIELDS PER RECORD. Nested sorts up to eight deep. TI Sort will load using the standard Extended Basic LOAD from drive one, or using LOAD AND RUN from drive one, or using machine code RUN memory image file from any drive. On screen display of the sorting process is optional.

In addition to TI Base data TI SORT can handle the following other types of data- in every case you must create a structure for the data similar to that used by TI Base (and similarly by PRK). This just means you have to tell the program how many fields are in each record, of what type, and how long they are. Structure files so created may be saved for later use either with the same data or with other identically structured data.

FIXED RECORDS- strictly speaking, only the actual fields you wish to sort on must be in fixed positions, but generally it is preferable if all data fields are of fixed length and position.

DELIMITED RECORDS- in which each field varies in length from record to record, and is merely separated from other fields by a special delimiter character, which can be any character you wish, so long as it is not included as part of a data item.

BASIC FILES- files created in a BASIC program, internal or display format. In this case embedded blanks may cause problems eg "THE RED SKY" as it cannot tell the difference between imbedded blanks and blanks between fields.

The program automatically (transparently) switches between three modes, depending on the amount of data- if it will all fit into available ram then the "scratch file" is not used, everything takes place in ram. For example 200 records of 80 bytes would be dealt with in ram.

After we run out of ram the use of sub files takes place, with a thrd mode available when you go over around 4000 records - but you really do not need to know all that at all! If you only do a little sorting, there is SORT1 from the library, with only the barest documentation. Or, there is this very friendly program specially written for TI Base, called TI SORT, which I recommend to you.

#### TI BASE...to come...

Dennis Faherty advises that he will do everything in his power to get more string handling into Version 3, including something like SEG\$, and he is also considering the possibility of adding bit manipulation into the logical operators (AND and OR) to allow dense data packing. (Dennis is the father of TI Artist author Chris, who first wrote TI Artist- version 1- when he was (gulp) a meer stripling of 14.)

#### C H A O S

There have been books on it, there have been TV programs on it and New Scientist has run articles on it... this is the idea that the fluttering of a butterfly's wing can have a causative relationship with a deadly hurricane on the other side of the world.

Impossible?...

Look at this really simple program:

```
100 INPUT "START (>1):";S
110 INPUT "MULTIPLIER:";M
120 FOR L=1 TO 20
```

```

130 S=M*S*(1-S)
140 PRINT S,
150 NEXT L
160 END

```

Everything in that little simple program is deterministic- there is no use of RND anywhere. We are only taking the progression 20 steps.

Now run the program with S=0.4 and M=2. Notice anything? Any chaos here? No? Lets try again... Now run the program with S=0.4 and M=3.25 What now? Any chaos or is it still fairly simple? OK let us go the whole hog this time. Set S=0.4 and M=4 Looking at the last print, can you guess what the next figure is going to be if we alter the loop size? You COULD work it out of course, but is there a pattern? There is a pattern actually. At M=2.8 we have a stable output after a while, at M=3.3 there is a stable pattern of two results, at M=3.5 there is a repeating pattern of 4 results- doubling all the time, and- here is chaos- as M grows larger, the difference in the size of M to change the size of the repeated pattern grows smaller very quickly. At M=5 you will not see the size of the pattern, but it grows a great deal if you then set M=5.000000000000001 - the equivalent of a butterfly wing beat in an active atmosphere!

#### TI BASE TIP

Want to make use of DATE? When you start TI Base, you have to enter a date in the format MM/DD/YY, and you have access to this as follows:

```

-in a command file-
LOCAL DATE C 8
REPLACE DATE WITH .DATE.
DISPLAY DATE
PRINT DATE
WRITE 2,15 "Date is ",DATE
RETURN

```

INCIDENTALLY... if you do not find in TI\*MES that for which you seek... perhaps it is because nobody knows you want that information? Drop me a line if there is a topic you want covered... as specific as possible! Actual coverage will depend to some extent on how many pages adequate coverage requires- we cannot print a 200 page tutorial in a 64 page magazine alas! - and the pressure on available space which requires every issue to have material left over!

A warming tale from down under of a large company with lots of expensive IBM and clone machines... and a staff turnover and training record that ensured nobody really knew how to use the things, most managing merely to use one or two standard programs, and then perhaps only just... faced with a task a little non-standard, and with a time deadline, can you guess the solution... yes, a TISHUG member took along his expanded TI99/4A and quickly and efficiently tackled the job required. Another Australian user provided computer support for a 5 day horse event, providing all manner of reports and printouts(Sound familiar, Ross? ED)

Genial Computerware is no more. JP Software has arisen, with the same products from a new address. JP Software is at 2390 El Camino Real, #107, Palo Alto, Ca, USA, 94306. Mail orders must be supported by international money orders.

John Guion, designer of the Multi-Mod, and upgrades for TI RS232 and TI Disk Controller Cards, died age 22 in September 1989 in a car accident. He designed the P-Gram card, designed a 32k ram for the 16 bit bus, and helped improve the Horizon Ram Card. His active support for our machine will be missed. There is no news regarding continued support or supply of the products he distributed himself.

#### AN APPRECIATION...

When the TI99/4 was first launched, there was very little support for it. Early owners enjoyed the support of the International TI99/4 Users Group in Bethany, Ohio, led by Charles LaFara. The first UK group of TI owners, TI Home, was among many beneficiaries of this group, and received a number of software items to start

off a UK software library for the use of members.

The first software librarian for the Bethany group was Guy-Stefan Romano. In 1981 Guy commenced the Amnion Helpline, a telephone advice service \*free\* for TI99/4(a) users.

Later, as the Bethany group expanded to 100,000 members, the only possible operation was as a commercial group, and Guy left to continue library support on his own. Guy operated a telephone advice line to US TI owners, called AMNION HELPLINE, entirely free of charge. Guy helped TI owners right from the start, and continued to do so until they chose not to seek his help any longer. He wrote recently that over a six month period he had had no requests for software and only a couple of phone calls. I gather the Amnion Helpline was financed by an ancient Swiss company but as with all Swiss corporate matters, the details are foggy. Despite his long term and outstanding contribution to the TI Scene, Guy is not mentioned in the excellent book "The Orphan Chronicles", possibly due to his part in assisting with the book. There is a reference merely to "one close former-IUG insider". UK disk owning members can find a file on the disk library catalogue called AMNION which contains selected items from Guy's large collection of software.

Guy was born in France, with Ph.D's in Romance languages, Germanic languages, and fine arts, with a Masters in Chinese. He was fluent in 17 languages! He spent time teaching languages, and commenced work on a computer based translation machine in the 1950's.

Guy knew England well. In employment he was an "internationally known potter" and a ceramic chemist - he spent some years learning his trade in the Staffordshire potteries. He was also a graduate chef. Guy developed a unique high temperature stoneware for cooking, marketed as AMNION WARE, which I gather was used by Elizabeth David (did I get that name right?) and David Mellor. He also wrote some cookery books. Guy died in August 1989 age 57. His love care and devotion to all TI99/4 and 4A owners will be missed, but his contribution will be remembered.

Here is an odd recipe from Guy to remember him by. It is a Hawaiian quick bread and is my downfall. Eat this still slightly warm with scads and scads of butter (and put a black wreath on your bathroom scale). This recipe serves... never enough...

#### KONA BREAD.

Preheat oven to 350F Cream together 1 cup of raw sugar and 1/2 cup of butter. (Beat until fluffy). Add: 2 eggs, 3/4 cup ripe bananas (bananas should be almost to the point where you are contemplating throwing them away - black and rather mushy. Why? Because almost all of the starch is converted to fruit sugar by this time.). Mix together 1 teaspoon baking soda, 2 teaspoons baking powder, 1 1/4 cups flour. Then gently fold into banana mix. DO NOT OVERMIX! Pour into buttered loaf pan and bake about 45 mins. GORGE YOURSELF. PS. To gild the banana, so to speak, you may add 1/2 cup chopped macadamia nuts or pecans to this. (American measures!)

An 80 column card is available for the TI99/4A, compatible with the 80 column version of Funnelweb. For details and ordering information, contact the manufacturers:

Dijit Systems  
4345 Hortensia Street  
San Diego, CA, USA, 92103 or 'phone  
(619) 295 3301.

Note that you will need a suitable monitor!

Congratulations TI on winning a patent on the microchip after all these years, giving a hefty boost to corporate income...

IBM got it wrong again, after really faulty maths in the first IBM PC we now have a problem with PS/2 Model 30 machines, a temporary cure for which is to plug the keyboard into the mouse port... and still IBM get to set the standards...  
o

# Putting it all together #6

by Jim Peterson, Tigercub Software, USA  
(see TND May 1988)

The hard part of learning to program is not in learning what the various commands do - it is in learning to put them together to do what you want them to do!

Key in this little program and run it to see what it does, then read the explanation of how it does it.

```
100 DISPLAY AT(3,11)ERASE ALL:"SPELLIT" !by Jim Peterson
110 DATA HIPPOPOTAMUS,CRITIQUE,KHAKI,IRIDESCENT,ARCHAIC,
    PNEUMONIA
120 !add as many DATA statements as you want
130 FOR CH=97 TO 122 :: CALL CHARPAT(CH-32,CH$):: CALL
    CHAR(CH,CH$):: NEXT CH :: CALL COLOR(9,8,2,
    10,8,2,11,8,2,12,8,2)
140 DATA END
150 READ M$ :: T=100 :: IF M$="END" THEN CALL CLEAR ::
    STOP
160 GOSUB 230 :: ACCEPT AT(12,1)SIZE(-28)BEEP:Q$
170 IF Q$=M$ THEN CALL SOUND(100,392,5):: CALL SOUND
    (200,523,5):: DISPLAY AT(12,1):" " ::
    GOTO 150
180 FOR J=1 TO LEN(Q$):: IF SEG$(Q$,J,1)=SEG$(M$,J,1)
    THEN 210
190 DISPLAY AT(12,J):CHR$(ASC(SEG$(Q$,J,1))+32);
200 T=T+50 :: IF LEN(Q$)=LEN(M$)THEN GOSUB 230 :: GOTO 2
    10 ELSE DISPLAY AT(12,J+1):" " :: J=LEN(Q$):: GOTO
    160
210 NEXT J
220 T=T+50 :: GOTO 160
230 DISPLAY AT(10,1):M$ :: FOR D=1 TO T :: NEXT D :: DIS
    PLAY AT(10,1):" " :: RETURN
```

Line 100 erases all the trash from the screen and prints the title centered on line 3. The screen is 28 characters wide. SPELLIT contains 7 characters. Now, 28 minus 7 divided by 2 is 10.5, so center the title at column 11. Put in as many lines of words in DATA as you want.

The lower case characters "a" through "z" are ASCII 97 to 122. The upper case are just 32 below that, ASCII 65 to 90. CALL CHARPAT to get the hex pattern identifier of each upper case letter in CH\$, then CALL CHAR to re-indentify the corresponding lower case letter to that pattern. The lower case letters are in sets 9 to 12, so colour them in the reverse of the normal screen, cyan on black.

The dummy data END in line 140, and the statement in line 150, causes the program to stop without crashing when it runs out of words, regardless of how many you put in. Line 150 reads each word from DATA one after another and sets the initial time to display it at 100 milliseconds.

Line 160 jumps to line 230 to display the word at line 10 column 1, wait for the set time, then erase it by displaying a null string which erases the line. Then it signals with a beep and cursor that it is waiting for your spelling, Q\$, at line 12 column 1.

Line 170 checks whether your spelling is the same as the word M\$. If so, it sounds two F notes, displays a null string to erase the word and goes back for the next.

If not correct, line 180 starts a loop for the number of letters, LEN(Q\$), in your spelling and compares each letter with the letter in the same position in M\$. If the same, it jumps to 210 to check the next letter. But if incorrect, line 190 displays at that point the character of the ASCII 32 higher, which is the same letter in inverted colours.

Line 200 increments the flashing time by 50, then checks to see if the word you spelled is the same length as the correct word. If so, it goes to 230 to flash the correct word, then continues checking letters. When

finished, line 220 increments flash time and sends you back to try again. The -28 size in the ACCEPT statement prevents the misspelled word from being erased.

If your spelling has a different number of letters, the first error probably has caused all subsequent letters to be in the wrong position. They would all be marked as wrong, so a null string is displayed to erase the rest of the word. The statement J=LEN(Q\$) clears the loop in computer memory to avoid the possibility of a MEMORY FULL error. Then you are prompted to try spelling the word again. ◦

## XB Trace to Printer

by Ross Mudie

This article was written in response to John Royal's need for a non-screen trace output.

At times it would be very handy to have the Extended Basic TRACE function display on a printer rather than on the screen of the computer, especially when TRACE destroys the graphics screen which you are trying to debug. I have had a look at doing this in assembly using interrupts whilst the extended basic program is executing however I found that the interrupts come far too infrequently (once every 20 milliseconds on the PAL version of the TI99/4A) resulting in several program lines executing before the interrupt driven program looked again at the current line number being executed.

The situation is not however hopeless, there is always another way to approach these problems. Mike Slattery some years ago suggested a system using a screen dump. The simplest screen dump can be achieved by using CALL GCHAR to read the screen and then output to the printer in the usual way. I recently read an article from Jim Peterson where he suggests having a short sub-program which outputs to a printer file, then at the start of each multi-statement program line in the area to be traced call the sub-program with the line number.

```
150 CALL TRACE(150) :: rest of line
160 CALL TRACE(160) :: rest of line
.
.
.
30000 SUB TRACE(LINE NUMBER)
30010 PRINT #1:"<";LINE_NUMBER;">";
30020 SUBEND
```

Somewhere in the program before calling the TRACE sub-program for the first time you will need to OPEN the printer file, typically: 120 OPEN #1:"PIO".

Your sub-program does not need to be named TRACE, I would just use: CALL T(Line No) and SUB T(L). You do not need to use long variable or sub-program names except when it will help with the documentation of the program.

This technique of course be extended to display the value of any variables. Here is an idea to display the variable X. Somewhere in a multi-statement line include the statement :: CALL V("X",X).

```
30030 SUB V(V_NAME$,VALUE)
30040 PRINT #1:V_NAME$;"=";VALUE;
30050 SUBEND
```

If you want to show the contents of a string variable use a string variable in place of the numeric variable shown in the example.

I am refraining from going into greater detail on this subject intentionally. Jim's idea is very simple to implement and versatile. ◦

# Teachers use the TI99/4A

by Bob Relyea

I was asked last year to do an article explaining how I use the TI as a teacher. Obviously it took me quite a while to get around to it. Surviving the first few months of the new editing job played a role in the delay.

First of all, I use the TI because it is an easy system to get acquainted with. Apple pretty much has their way as far as the school market is concerned. Do not ask me why as the Apple IIe that we have in our Science department is an archaic device that does not have many of the nice programming features that the TI does. For example, it will not do automatic line numbering (NUM) and it will not resequence (RES). Editing is very clumsy as well, but with the TI it is very simple.

I did not write this article simply to rubbish the Apple but to explain why I use the TI instead of other machines in my teaching. It has all the features that I need. I am basically a word processing, data base and spreadsheet person. These features are well developed with the TI and I get out of them all that I need at a price that leaves other computers for dead! Cost-wise they do not even compare. This is all to say nothing of the fun I get out of the club and the things that we all learn together. I like the fellowship of the Main and Regional Meetings to boot. People have been very friendly and very willing to help in every way.

Here are some of the things that I have done with the TI the past couple of years:

1. Grades for the HSC students have to be 'standardised'. This is a word which basically means the average deviation from the mean of a set of grades. It is a very time consuming procedure to do manually. I adapted a program written for the Apple to run on the TI and everytime I need a set of grades standardised which is about 20 times a year, I just boot up the Grade Standardiser program (see page 27 of the May, 1989 issue), bung them in the old TI and let 'er rip. In a short period of time it is all done and I get an instant print-out with the scores.

2. SORTING is a feature of both Multiplan and TI Base that I find extremely useful. For instance, every year my year 11 and 12 students purchase a book containing the last half dozen HSC papers in Physics together with suggested solutions. I type these all in TI Base under the titles:

CORETOPIC SUBTOPIC YEAR QUESTNUM

For example,

Waves Diffraction 1984 B 18

Once this is all typed in I usually sort on subtopic which ends with all questions on a particular subtopic being listed together. This means that everytime I finish teaching a topic, for practice we turn to the HSC questions booklet and know where to find all questions on that topic without having to look all over for them. I find this very useful.

While on the topic of sorting, I use a similar procedure for producing class lists. Last year I took on the job of Year Patron for the incoming year 7's. Year Patrons are responsible producing classlists for each of the nine year seven classes that we have. I originally typed these all in manually on Multiplan which involved the Surname, First name, and Roll Class. I stored each one under its separate name, such as 7Green. Print-outs were then produced from these lists. I also used the external merge feature of Multiplan to get all of these lists together and then I used the SORT feature to get an alphabetised list of every student in year 7 (216 students). This list is extremely useful

for administrators to assist them in finding students (and the class they are in) quickly. Once you have them sorted you can change all this to a DV 80 file (using the print option) and use FunnelWeb to make any changes. It is easy to insert new names or delete the names of students who have left. A similar thing could be done on TI BASE but I have not as yet done it this way. With TI-SORT the sorting might be faster as it took 15 minutes on Multiplan with floppies. If I had had the Mini-expansion System Ramdisk at the time it would have been a lot faster.

3. Anything that involves typing up documents I do on FunnelWeb. You can well imagine how many tests, excursion notes, etc. this would involve during the year. Last year I had a go at typing up lab practical tests and with Picasso I was able to make some good electric circuit drawings right on the computer, showing resistors, power supplies, globes and all.

I find the machine to be just what I want and I am encouraged by reports of new hardware and software being continually developed. I do not plan on abandoning the machine and will use it throughout the 90's. I hope this gives you some idea as to how I take advantage of the TI's many fine features. o

## Sorcerer, part 4

A Walk Through, by Scorpia, USA

Try to go West, and a Gnome will appear and demand a Zorkmid. Give him your coin, and then proceed west into the park. Of all the places here, only one is important - the Arcade. Everything else is pretty much for show. So, keep on West until you reach the end of the Midway, and then go South into the Arcade.

Open the Aqua Vial, drink the potion, then drop the vial. You are now dexterous enough to win a prize, so take the ball and throw it at a bunny. POW! Direct hit! As the bunny goes flying, the hawker will give you a glittering scroll of Malyon. You do not need to Gnusto this one, as it will be used only once, and very soon.

Now leave the park, and once back in the tunnel, go south and you will be in the Carving Room. One carving looks like a dragon, and that is the one you want. First, Yonk Malyon. Then, learn Malyon. Finally, Malyon Dragon. The souped-up spell brings the dragon to life! Good thing for you it is not permanent, or you might have been fried to a crisp! In any case, there is now a passage South through the wall. Take that into the Sooty Room.

Now you are about to enter the most bizarre part of the game. Open the Orange Vial. Frotz yourself. Go East into the Coal Bin room. There will be a cave-in behind you, so you can not go back now. In addition, you are having some trouble breathing, so drink the orange potion and drop the vial. Suddenly, your Older Self appears, sliding down from the Upper Chute! Listen carefully, and your twin will tell you a number. Make careful note of it! Now, hand your spellbook to your Twin, who will take it and dive down the Lower Chute.

Go East to the Dial Room. There is a dial on the door, which can be set to any number from 0-873. Set it to the number your Twin just gave you. This is also a variable number and will change from game to game. Then open the door, and go into the Shaft Bottom. Get the rope. Make sure that you have nothing with you now but that rope. If you have anything else, drop it.

Climb up to the Shaft Top. Go Southwest into the mine. A timber is here (does not that bring back fond memories of Zork?). Tie the rope to the timber, then continue on Northwest and West. You are now at the top of the Upper Chute. Put the beam across the chute, then drop the rope down the chute. Finally, climb down the rope, and you will be in the Slanted Room.

There is a scroll here, and also an opened lantern. Get the scroll, and Golmac yourself back in time. Now open the lantern, and get the Vardik spell. Time is running short, so go East down the chute into the Coal Bin room, where you will see...your Younger Self!

continued on page 6

# Jenny's Younger Set

Dear Jenny,

This is another quiz program on DOCTOR WHO. I hope it is OK for THE YOUNGER SET.

VINCENT MAKER

```
100 CALL CLEAR
110 REM *****
120 REM *DOCTOR WHO QUIZ*
130 REM * *
140 REM * BY *
150 REM * *
160 REM * VINCENT MAKER *
170 REM * *
180 REM * FOR *
190 REM * *
200 REM * MELANIE LEWIS *
210 REM *****
220 DISPLAY AT(5,7):"QUESTION ONE:NAME THE MAN WHO WAS
    BEHIND THE CURSE OF PELADON?"
230 DISPLAY AT(8,7):" A) ARCTURUS B) IZLYR
    C) HEPESH D) KING PELADON"
240 PRINT "PRESS THE CORRECT LETTER."
250 CALL KEY(0,J,I)
260 IF I=0 THEN 250
270 IF J=67 THEN RIGHT=RIGHT+1 ELSE WRONG=WRONG+1
280 CALL CLEAR
290 DISPLAY AT(5,7):"QUESTION TWO : WHO LED THE DOCTOR
    AND ROMANA TO SAFETY IN THE 'WARRIORS GATE'?"
300 DISPLAY AT(10,7):" A) BIROC B) RORVIK
    C) DAVROS D) CONGRESSMAN BROOK"
310 PRINT "PRESS THE APPROPRIATE KEY."
320 CALL KEY(0,J,I)
330 IF I=0 THEN 320
340 IF J<>65 THEN WRONG=WRONG+1 ELSE RIGHT=RIGHT+1
350 CALL CLEAR
360 DISPLAY AT(5,7):"QUESTION THREE : WHO KILLED DAVROS
    IN 'RESURRECTION OF THE DALEKS'?"
370 DISPLAY AT(10,7):" A) THE DOCTOR B) TEGAN
    C) STEIN D) THE DALEKS"
380 PRINT "PRESS THE RIGHT KEY."
390 CALL KEY(0,Y,U)
400 IF U=0 THEN 390
410 IF Y=67 THEN RIGHT=RIGHT+1 ELSE WRONG=WRONG+1
420 CALL CLEAR
430 DISPLAY AT(5,7):"QUESTION 4 : WHO KILLED LYTTON IN
    'ATTACK OF THE CYBERMEN'?"
440 DISPLAY AT(10,7):" A) THE DALEKS B) THE DOCTOR
    C) THE ICE WARRIORS D) THE CYBERMEN"
450 PRINT "PRESS THE ANSWER."
460 CALL KEY(0,B,A):: IF A=0 THEN 450
470 IF B<>68 THEN WRONG=WRONG+1 ELSE RIGHT=RIGHT+1
490 IF RIGHT=0 THEN A$="NEVER GO FOR A JOB AS A
    'DOCTOR WHO' EXPERT. ZERO OUT OF FOUR."
500 IF RIGHT=1 THEN A$="ARE YOU SURE IT WAS THIS QUIZ
    YOU WERE DOING? ONE OUT OF FOUR."
510 IF RIGHT=2 THEN A$="DON'T RATE YOURSELF A PRO JUST
    YET. TWO OUT OF FOUR."
520 IF RIGHT=3 THEN A$="YOU ARE NEARLY AN EXPERT...
    BUT NOT QUITE..."
530 IF RIGHT=4 THEN A$="IT'S A SHAME THAT THEY'VE
    TAKEN THE PROGRAM OFF THE AIR. YOU COULD'VE GIVEN
    SYLVESTER McCOY A RUN FOR HIS MONEY."
540 CALL CLEAR
550 PRINT A$
560 PRINT
570 PRINT
580 PRINT
590 PRINT "YOU GOT ";RIGHT;" RIGHT AND ";WRONG;" WRONG."
600 END
```

Dear Crocodile Jones,

I have a problem with ADVENTURE 7. I cannot get off the merry-go-round with out getting killed.

How do I do it?

V. MAKER

Dear Vincent

Look at the the controls of the ride. There is a button there. Press it and the ride will stop.

Then it will be safe to jump from it.

CROCODILE JONES

Dear Crocodile Jones,

I am having problems with ADVENTURE #9 - GHOSTOWN. I cannot seem to find a hammer to shoe the horse so I can ride to the mountains beyond the ravine. Please, may you assist me with this?

Thank you.

Yours sincerely,

David Meldrum

Dear David,

To shoe the horse, use the horseshoe to open the jail. The key is in the hat at the barbershop.

To get to the mountains, jump from the ravine.

Thank you for your letter and all the best in completing your adventure.

Yours sincerely,

CROCODILE JONES.      o

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on to the next CRU address. If it is not 0000h, then the program jumps to the assembly language program which starts at the address stored in 4004h, 4005h. This is a power up routine for the device, which needs to execute in order that the device is set up correctly. Disk controllers normally have a power up routine to set up their controller chips, whereas RS232 does not have such a routine. It is this power up routine that is used by some disk controllers to change the title screen and by RAMdisks to put a menu on the screen instead of the title screen.

When all the devices have been checked and their power up routines executed, the screen is enabled and the title screen appears and the program waits for a key to be pressed. When one of these is detected, the program then checks the GROMs for items for the menu. This is done by looking at the first byte in each GROM starting at address 2000h and going up to E000h in steps of 2000h. If an address has AAh as its data then this GROM has one or more items for the menu. At an offset into the GROM there is a linked list of items for the menu which are moved to VDP RAM and their starting addresses are stored in a table. Also the contents of cartridge ROM space at address 6000h are also examined for AAh (unless you have a version 2.2 system GROM) and if present items from that ROM are also added to the menu along with their starting address.

The menu screen is then constructed and displayed and a beep generated somewhere along the way and the program waits for a number to be entered. When a number in the range of the menu items is entered, the program starts executing the selected program either in GPL code in GROM or assembler code in cartridge ROM.

Well that is the end of the story of the start up from power on for the console. Clearly, if you have devices which have power up routines in their DSR, then they may cause other things to happen. However, I thought I would next look at the software interface to I/O devices. That is, what happens when you OPEN a device and so on.      o

## Upgrading the PEB power supply

by Dr. Eric Bray MD, PA USA

(Caution: This modification should only be attempted by those persons who are able to use a soldering iron and have experience working with electrical equipment and parts. Any damage that results from following these instructions is the responsibility of the person performing these tasks).

Myarc Inc, of Martinsville NJ, has produced a hard and floppy disk controller card for the TI99/4A and the Myarc Geneve 9640 computers. This has led to many people buying separate power supply boxes in which to house their new hard drive(s). The reason that people have had to make these purchases, is because when Texas Instruments originally built the Peripheral Expansion Box, it was engineered with a slightly under powered power supply going to the drive section of this PEB.

However, by making a few minor modifications to the power supply board inside the PEB you can then house a low power half height hard disk inside the PEB along with a low power half height floppy drive.

### Parts and Equipment:

- 1) Four (4) 3 Ampere diodes
- 2) One (1) Tube of heat sink grease
- 3) One (1) T03 heat sink
- 4) One (1) 1000 uF axial capacitor (35 wvdc)
- 5) One (1) THM6079 heat sink
- 6) One (1) 78H12 voltage regulator (3 to 5 Amp )

### Instructions:

Turn off the power to the PEB and remove all of your cards and drives from the PEB. Next, unscrew all of the screws holding the PEB together and disassemble the PEB. You will see the power supply board located in the section that also houses the fan. Carefully disconnect all of the clip-on connectors that connect the transformer to this card. Then, using the proper size screw driver, disconnect the holder from the base of the PEB and unscrew the power supply from this holder. Be careful to keep the board oriented in the same position that it occupied on the holder.

With the components of the board facing towards you, you will notice four small 1 Amp diodes in the upper left hand corner of the board. These are small solid coloured diodes with a silver band around one end. They are identified on the board as D1, D2, D5 and D8. Very carefully de-solder these diodes from the board. Make sure that you pay attention to the pairing of the electrical connectors on the reverse side of the board. Just to the bottom right of these diodes, you will see a 47 uF capacitor identified as C18. Very carefully de-solder this capacitor from the board.

To the right of the site where the capacitor was located will be a voltage regulator identified as Q1. Remove the two screws and nuts that hold this device in place. Very carefully de-solder this device from the board.

Now that all of the items have been removed from the power supply board, the next step is to very carefully, using a jeweller's screw driver, enlarge the old openings that contained the diodes. (DO NOT TRY TO USE A DRILL BIT OF ANY TYPE TO PERFORM THIS TASK.) This task must be done by hand. This is necessary so that the new diodes' wires can fit into the openings. You can test this by inserting the wires into these openings until they allow the wires to slide in easily.

After the openings have been widened enough to allow the new wires to be inserted, unscrew the screw and nut holding the voltage regulator identified as Q2 and insert the THM6079 heat sink under this device.

Make sure that both sides of the heat sink has heat sink grease on it. Re-tighten the nut and screw holding this voltage regulator in place.

The next step is to coat both sides of the T0-3 heat sink with heat sink grease and place this on the board along with the 78H12 voltage regulator. Tighten up the two screws and nuts that hold it in place. After that is completed, the device may now be soldered in place on the board. You may have to bend or remove some of the T0-3 heat sink fingers to get this device to fit correctly!

Replacing the capacitor is the next step. Care must be taken that the positive lead is inserted into the opening marked (+). After both wires are in place, then this device can also be soldered into place on the power supply board.

The last step is to replace all of the diodes. Care must be taken to ensure that these devices are oriented in the correct manner. On the board you will see that there is a drawing of these diodes underneath where they will reside on the board. There is a light band drawn on one side of the diagram. Make sure that the light band of the new diodes are oriented in the same manner when they are placed in the board. It is best to work from the bottom up when replacing these diodes. Be careful that the soldering is done correctly!! (Get experienced help if you are unsure about this step!!) You do not want to have solder bridges or bad connections on this step.

Now that all of the soldering is done, you can place the power supply board back on its bracket and screw the bracket back to the floor of the PEB. Re-connect the transformer plugs to the proper places on the board. Now plug in the PEB and with a voltmeter, test the output going to the two lines going to the drive section. If everything was done correctly, you should have one nice 12 volt and one nice 5 volt reading.

The last step before assembling the PEB, is to drill many 1/4 inch holes on the floor and back of the drive section of the PEB. This is to allow for ventilation for your hard disk. (This is very important otherwise the hard disk drive will overheat, Ed.)

Finally you can reassemble the PEB and place your drives in their proper place not having to worry about the power supply to these devices.

I wrote about how to add an extra 12 volt, 1 Amp regulator to the drive power supply section in the February 1988 issue of "MICROpendium". The previous modifications can be used along with that modification. If you choose to do so, you can use the 12 volt 1 Amp regulator to power your floppy drive and the new modification to power the hard drive.

I have been running a Seagate ST-138 hard drive and a Teac 3 1/2 inch floppy drive in a modified PEB for the past year and a half with no problems.

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skills - arbitrating, speaking in tongues. Responsible for restoration of high enchantment dues. Double Fanucci handicap: 42.

Forburn the wily, Double Fanucci champion. "The Encyclopedia Frobozzica calls Double Fanucci a 'game played with cards'. I do not play games. I do not play anything." Never formally studied magic. First won a spell book from an unsuspecting G.U.E. Tech student in a 902 Fanucci match. Raised the level of play in Double Fanucci championships. Brought new meaning to the word "chiseler". Greatest skill - drawing trebled fromps. Double Fanucci handicap: 0.01.

If you have any trouble with the above file, or you have any other questions, you can write to me at...

141 BEECROFT ROAD,  
BEECROFT 2119, NSW

# Newsletter Update

by Bob Relyea

## NATIONAL NEWSLETTERS

TIUP TIT BITS, Western Australia (Perth), December, 1989: summary of other users groups newsletters, a program to type in (DISKCONTENTS), notes on the Internal Board (Zeno Board) by JFW, various articles, a crossword, form letter writing with TI-Writer, basic computer graphics in XBasic, a list of TI-99/4A suppliers.

ATICC, Adelaide, April, 1990: simple rules for loading programs (a summary), a review of Page Pro, Techo Time (RS232 interface, DEC, FDOS), right justified text with program lines, various articles on programming hints, transferring files between the 4A and PCs without a modem, an index of the club's library of disks.

TIBUG, Brisbane, April, 1990: a list of the disk library, repairers roundup, an exhaustive listing of tapes in the local library, Tips From the Tigercub #17, solution to a puzzle, 31/NOTES by Barry Traver, notes on playing NIMROW together with the program to type in.

## OVERSEAS NEWSLETTERS (March, 1990)

MICROpendium: using the p-system, BBS listings, Standard dev in c99, the game of Yacht, expanding systems involving modems, Checkbook Balancer, TI's unreleased legends, reviews involving Panasonic KXP1124 Dot Matrix Printer, Contact Bridge V3.0, Boot Disk Changer, Multiplan Upgrade TMS-9900, Clipboard, Cryptgrams, a TI-Base application by Bill Gaskill, user notes including saving paper with TI-Writer.

LA 99ers: editorial and a digest of various newly-released software, such as, The Missing Link and Membership Manager, trivia corner, computerised VCR with the TI, kids corner, a review of TI-Base by Fred Moore, programming hints involving parameter passing, a list of disks available.

TIC TOC, Rocky Mountain 99ers: a dictionary of computer jargon, a review of TI-Base by Martin Smoley (sound familiar?) which covered half of the magazine, Horizon Ramdisks, an article on TI-Writer Formatter's extra space by John Owen, a short program on justifying decimals in Basic by Earl Raguse.

TACOMA 99ers: ramblings, an article on memory back-up (Part I), Joe's Zeno Board Project (part 2), Note Pad creation using Page-Pro (Part I), A review of GIF Picture Loader by Barry Boone, an explanation of the Basic Graphic Command's N1 and N2 parameters.

## MORE OVERSEAS NEWSLETTERS (April, 1990)

MICROpendium: c99 - a bit of calculus, hardware project involving the modification of the PEB power supply to support internal hard and floppy drives, Reviews (Rave 99 Memory Enhancement Card, Page Pro 99 PIC CAT, Powercost TI-Keno, c-Shell 99), XBasic and the Morse Code, Pyramid Solitaire, Grom devices such as the Gram Kracker, a large advertisement for the MISSING LINK, other bits and pieces under the title of User Notes (6 pages worth).

CIM 99, Ottawa: Your friendly French-speaking magazine! A good opportunity for those studying foreign languages.

TIidbits, Mid-South 99 Users Group: besides the local information there was a review of Four-A/talk by Bill Gaskill, universal graphics interface, notes on upgrading your system, 'This Month In History'.

LA 99ers, TopIcs: an article on Loan Analysis and Printer by Tom Freeman together with the program to type in, other bits and pieces, such as recipes(!?). I guess you might as well have a byte of the carrot while you are at it! Four-A/talk by Bill Gaskill, a review of software

such as TI TAX and Spell It, trivia corner, this month in History, 'Did You Know' by Chick De Marti, TI-Base and TI-Writer (containing a handy idea for converting TI-Base files to a DV 80 file - I have been looking for that ED), a list of recent ASGARD software and a list of their disks collection.

SPIRIT of 99, Ohio: a couple of pages devoted to TETRIS, several pages devoted to an article entitled 'The Wonders Down Under' by Bob Carmany which describes his tour of eastern Australia and his meeting with TI magnates such as Tony McGovern - an interesting article! an article on changing sector editors by Jan Alexandersson, another article on Debugging, hardware tips on repairing 'zapped' XBasic cartridges, TI-Base by Martin Smoley.

TI Focus, Ontario: news and views by Tom Arnold which is a wide-ranging article on software and hardware, Why Should You Learn To Program? by Jim Peterson, a list of three new disks available, "More TI-Base" by Rick Lilley (no relation to Dennis, sorry), Tips from the Tigercub #58.1), What to Read by Jim Peterson, Run a Variable by Bill Hudson, New Age/99 - an article devoted to encouraging TI users to stick with it. •

## How Does It Work?

by Geoff Trott

We are now getting down to the nitty gritty part of the discussion. If you want to check on what happens you will need the program Explorer and lots of patience. The following explanation is based on my observations and the study of the book Intern by Heiner Martin.

The reset pulse gets the CPU to start a program stored in system ROMs which in turn is the GPL interpreter and starts to interpret the GPL program stored in the system GROM starting at address 4Fh. This program starts by turning off all the sound generators, setting up the VDP write registers to show a cyan blank screen plus other data to set up the VDP processor. Then the program clears areas of scratchpad RAM (8300h to 8371h; 8374h to 837Fh; 8382h to 83BFh; and 83C2h to 83C9h). Then the TMS9901 is set up with inputs and outputs for keyboard scanning and cassette interface. Then it generates the accept tone. This tone takes some time to actually appear so the program goes on to set up the main title screen. It checks the size of the VDP memory and sets the bit in the VDP register for 16K. The last address of VDP memory is stored in 8370h. Interrupts from the VDP processor are then disabled. Then parts of the VDP memory are cleared (0 to FFFh); the colour table is loaded into 380h to 39Fh; the standard character set (large capitals) is loaded into 900h to AFFh; and some special characters into 808h to 857h (ASCII codes 1 to 10) used for the map of Texas and the copyright symbol. Then the screen image table is filled with space characters, the keyboard mode is set to 5 and the keyboard is scanned for a key press. All modes are checked and then the colour bars are built up. This is done using ASCII codes 60h, 68h, 70h, to D8h with 2 of each character across and 3 down. The top colour bar is in rows 0 to 2 of the screen while the bottom colour bar uses rows 18 to 20. The colour table has the foreground colour as transparent (0) and the backgrounds in the order 6, 3, 1, 11, 12, 13, 15, 4, 2, 13, 8, 14, 5, 9, 10 and 6. Then the map of Texas is put in rows 5 to 7 columns 15 to 17 and the message "ready-press any key to begin" is put in row 15. The rest of the messages are then put on the screen in rows 9, 11 and 22.

Next the program looks for I/O devices. This it does by setting the CRU bits from 1000h to 1F00h in steps of 100h one at a time and checking the contents of the byte at memory address 4000h for the data AAh which is used to indicate a valid DSR ROM. If it finds a DSR ROM present, then it checks the word at address 4004h, 4005h to see if it is 0000h. If it is 0000h, it carries

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# Regional

## Meeting Summary For JUNE

Banana Coast	10/06/90	Sawtell
Carlingford	20/06/90	Carlingford
Central Coast	09/06/90	Saratoga
Glebe	07/06/90	Glebe
Illawarra	11/06/90	Keiraville
Liverpool	08/06/90	
Northern Suburbs	28/06/90	????
Sutherland	15/06/90	Jannali

### BANANA COAST Regional Group (Coffs Harbour area)

Regular meetings are held in the Sawtell Tennis Club on the second Sunday of the month at 2 pm sharp. For information on meetings of the Banana Coast group, contact Kevin Cox at 7 Dewing Close, Bayldon, telephone (066)53 2649, or John Ryan of Mullaway via the BBS, user name SARA, or John Ryan of Mullaway via the BBS, user name SARA, or telephone (066)54 1451.

### CARLINGFORD Regional Group

Regular meetings are normally on the third Wednesday of each month at 7.30pm. Contact Chris Buttner, 79 Jenkins Rd, Carlingford, (02)871 7753, for more information.

### CENTRAL COAST Regional Group

Regular meetings are now 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 St, Glebe. Contact Mike Slattery, (02)692 0559.

### ILLAWARRA Regional Group

Regular meetings are normally on the second Monday of each month, except January, at 7.30pm, Keiraville Public School, Gipps Rd, Keiraville, opposite the Keiraville shopping centre. A variety of activities accompany our meetings. In March, Geoff gave an interesting demonstration of some of the lesser used features of Funnelweb and in April we diagnosed problems that users were having with hardware/software. Contact Lou Amadio on (042)28 4906 for more information.

### LIVERPOOL Regional Group

Regular meeting date is the Friday following the TISHUG Sydney meeting at 7.30 pm. The June meeting will feature a demonstration of Page Pro and its utilities. Contact Larry Saunders (02)644 7377 (home) or (02)642 7418 (work) for more information.

### NORTHERN SUBURBS Regional Group

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

Come and join in our fun. Dick Warburton.

### SUTHERLAND Regional Group

Regular meetings are held on the third Friday of each month at the home of Peter Young, 51 Jannali Avenue, Jannali at 7.30pm. Group co-ordinator is Peter Young, (02) 528 8775. BBS Contact is Gary Wilson, user name VK2YGW on this BBS. The format of each meeting is quite informal, with topics ranging from software reviews to hardware modifications with a fair sprinkling of purely social chatter in between. The last meeting was spent going over features of TI-WRITER V4.4. Future meeting dates are as follows:

MAY 18/05/90 JUN 15/06/90 JUL 20/07/90

Peter Young Regional Co-ordinator

## 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 now held at the RYDE INFANTS SCHOOL, Tucker Street (Post Office end), Ryde. Regular items include news from the directors, the publications library, the shop, and demonstrations of monthly software. The meeting this month will be a carry-over from March with a demo of the software in EPROM fitted to a RAMDISK. We will also be discussing ideas for the future (please read Coordinator's Report before coming to the meeting). Games with Shane.

Other meeting dates for 1990 will be as follows.

JULY 7  
AUGUST 4  
SEPTEMBER 1  
OCTOBER 6  
NOVEMBER 3  
DECEMBER 1

All topics have yet to be defined

Russell Welham (Meeting coordinator).

## For Sale

### MODULES!!!!!!

1. MUNCHMOBILE	-\$10
2. SLYMOIDS	-\$10
3. HUNT THE WUMPUS	-\$10
OR ALL THREE FOR	-\$25
4. TOUCH TYPING TUTOR	-\$20
5. TERMINAL EMULATOR	-\$20
6. CONSOLE WRITER	-\$20
OR ALL THREE FOR	-\$50
OR ALL SIX FOR	-\$70
7. EDITOR/ASSEMBLER	-\$50
OR ALL THE ABOVE FOR	-\$100

ALL MODULES COME WITH MANUALS  
PLEASE CALL JOHN AFTER 8PM ANY DAY  
PHONE 670 2050

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There has been some misunderstanding about advertisements put on the BBS and then not appearing in the TND. Everything put on the BBS is edited and given to Rolf who has to make a decision as to what goes in on a particular month. If you definitely want an advertisement to go in the TND and not just appear on the BBS then it has to be made clear.

I will accept and eventually get edited any material given to me irregardless of the form in which it is submitted. If you have time to do a few things before submitting the article(s) it would be a help. To this end I refer you to the article entitled 'Producing the TND' which appeared on page 4 of the April, 1987 edition of the magazine. I also included some thoughts on this matter in my editorial of the April, 1990 issue.

In conclusion, and to make a long story short, most of the material that appears in any issue of the TND has to be edited and printed about a month before you receive it.

The deadline for articles given to me for the remaining issues for the year are :

June	13 May
July	10 June
August	8 July
September	12 August
October	9 September
November	7 October
December	11 November

I hope this gives you a better idea of the timing involved in the production of our great little magazine.