TIsHUG NEWS DIGEST

Focusing on the TI99/4A Home Computer

Volume 12, Number 1 January/February, 1993

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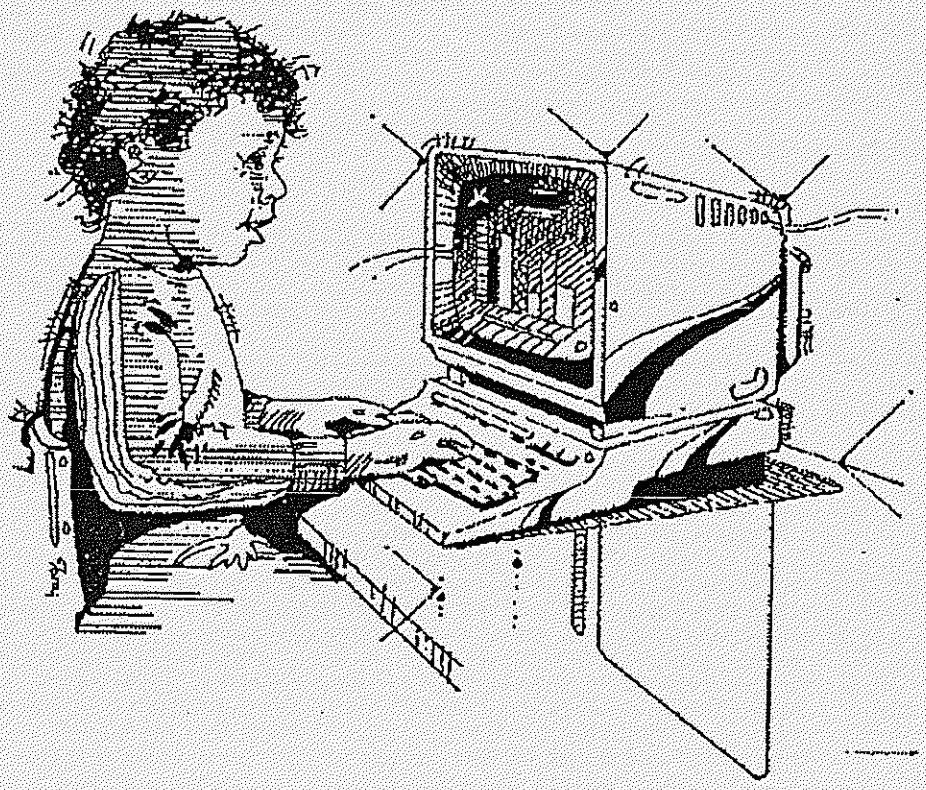

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TIsHUG News Digest

Jan/Feb 1993

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TIsHUG Sydney Meeting

The February Meeting will start at 2.00 pm on the 6th of February at Ryde Infants School, Tucker Street, Ryde.

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I N D E X

Editor's Comments

by Bob Relyea

I would like to wish everybody a happy 1993 and I look forward to a rewarding year computing the TI way. Let's hope those TIM cards get here soon! We still need more people contributing articles so that we are not just reprinting overseas articles. Everybody can do something.

The thing that concerns me the most, however, is this recent thrust towards opening the group to IBM clones. I am personally dead against it! There are already IBM groups that people could join in with. I am of the opinion that if the group goes this way it will hasten its demise, not prolong it. We have a solid core of people that will be using the TI as their main machine for many years and I have no fear of folding in the next year or two. We have the resources to produce the magazine of the same quality for the next few years no matter what the membership is and if we get to the point where we have to cut corners a bit and staple sheets together to produce a magazine- so what? The TI is fun to use and those other computers are not. I do not care if they are faster and have more capabilities, I enjoy being in the group learning all I can about the machine and seeing how far we can expand it. There are enough things for me to learn about the TI/994A to last me the next 20 years or more. I am in it for the FUN, not to compare it with other computers. And when it comes to capabilities my TI produces material that compares favourably with what the other teachers get out of their IBM & whatever anyway. So why pay thousands in an effort to keep up with the technological rat race when you can pay a few hundred for a fully expanded system. The trouble with a lot of people is that they are too concerned about what people will say if somebody finds out that they are using a 12 year old computer with a 32K memory. And in most cases the reason is no more than that- peer pressure! I highly recommend the short article that should appear in this issue entitled "What TIing Means To Me" by Pat Taylor. See you at the next meeting.

COORDINATOR'S REPORT

[EDITOR'S NOTE: This report was not received in time to make the December TND so it is included here as most of what Dick intended to convey still applies.]

Well, we have reached the end of yet another year with the TI. It is time to review our progress, and to make plans for the future. There have been both positive and negative developments over the past year. Firstly, I would like to warmly thank all those hard working members of our club who have contributed during 1992 to our success. We have continued to provide a real service for the Australian TI Community.

Our monthly TND, distributed regularly by our band of tireless, dedicated, magazine munchers, has been instrumental in holding our club together. Thanks Rolf, Bob, Geoff, and all those who contributed or helped it to be the great magazine it is. Our shop has been a cornerstone in our success. Because of Percy's hard work and organization, we have been able to meet most of the software and hardware needs of club members. Because club members are buying their goods through the shop, we have been able to finance our other services.

We have sent hardware all over Australia. We have been able to help members with technical problems, repair faulty systems, distribute colour monitors and help members to add all manner of peripherals to their machine. There have been a significant number of members who have contributed their time and effort in helping other members and their problems.

Another major aspect of the club's functioning, has been the provision of our BBS which remains available 24 hrs a day, and only stops operating when lightning strikes. Thanks Ross for all you have done for this club, both as a sysop and as someone we can all come to when we need help. We have continued to provide services like our printer re-inking, our console exchange, our provision of expansion kits, our disc software library, our book and periodical library etc. I want to thank everyone in the club who has helped out in any way during 1992. The list of helpers is quite large. I particularly want to mention Ian Mullins who accepted the responsibility of co-ordinating our TI Faire. You will agree, that he has done a great job together with our committee of helpers.

However, there is another side to consider. Our membership is steadily falling, and this will become particularly evident by the end of April when most members renew. With falling membership there is an increasing load on a smaller number of workers. The provision of our services gets harder and costlier per unit, eg the magazine. It is clear that as well as falling numbers, there is also a clear reduction in motivation and morale, not among those who are really active in the club, but a general falling off of interest. This has been obvious for some time. Attendances at monthly meetings are falling. People do not seem interested enough to bring their own systems or hardware. The BBS usage has fallen away dramatically, to the point where Ross seriously questions its continuing. Attendance at regional meetings has declined. Some regional meetings are no longer held.

When I talk to members, one fact is abundantly clear. Horror of horrors! The majority of our practising TI members actually own and use an IBM clone. Some like myself use both machines regularly, and for different reasons. Some of those who do not own one, use one at work. A significant number when asked when they last used a TI will say 12 or 18 months ago. It is clear why many users are switching to another computer. The price and performance compared with a TI are breathtaking. Sure, I know that this machine was a fantastic machine in its day, however technology and mass production have overtaken it. With the TI, software has basically stopped. One can obtain software for a clone which can do many of the things we can only dream about on the TI. The TI is also limited by its low memory capacity and its slow speed. The simple facts are, that technology rolls on, and gathers speed month by month. The TI is now in computer terms almost extinct, a dinosaur, still used by a small group of enthusiasts, but neglected by almost everyone else.

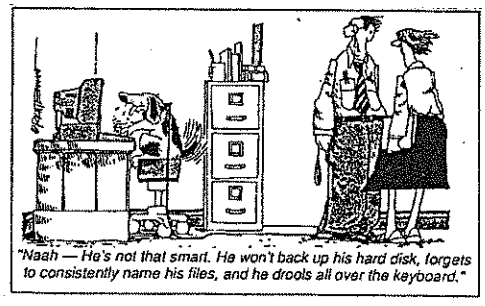
Where does this leave us? Obviously, if we continue as we are, we can expect to function as a viable organization for perhaps one or two more years at most. Then we die as a club. We lose the capacity to support TI users, We lose our social network, we simply break up and go our own ways. A small group may still battle on, but it will soon die because of lack of support. Because so many of our members are already using IBM type machines, it is obvious that we can maintain our unity, our strength, our financial viability, our service to TI users if we take the step of extending our club to include other computer users, namely IBM machines. My memories of earlier days with TIshug, were ones where there was excitement because of new products, new technology, new software, and new challenges. Let's face it, the excitement for the TI has gone. AS a club, we are becoming apathetic, and morale is steadily falling. We need a new challenge. We need to rekindle the old excitement. We need to enthuse our members to bring their hardware to meetings, to show off their latest acquisitions, the latest software. We need to provide help for those who need it using DOS.

TI users, because of their background, are in a far better position to change over to a DOS machine, than the majority of DOS users, who have limited computer backgrounds. There are large numbers of IBM machine users within reasonable distance of our meeting place. There are many IBM users who really need help. There are many kids who really love the games. There are many people who use a machine at work, who lack confidence and skill. When I began to ask around among TI club members about their use of IBM machines, I was staggered to find out how many of our strongest TI supporters are actually using one now at home. When I asked members what they wanted, it became abundantly clear, that the majority of members support such a move. I know that a few TI users will be fearful of such a move, but I strongly believe that the only way we can continue to support the TI, is to extend our club membership to other users. I do not expect major changes overnight, but rather that we gradually increase services to include help for other users. TND would continue, but gradually as we expand, include different articles and advertising. We would gradually bring new members into the club, and meet the needs as they arise.

I intend to bring this matter before the membership formally, as soon as possible. I would expect that we will call an Extraordinary General Meeting early in 1993 to put it to the vote. If our members do not want this to happen they can vote against it. However, judging from the expressions of support I am getting, I would be surprised if this happens. Let's go into 1993, with a new purpose, a new goal, and feel the excitement that comes from doing new and challenging things.

See you at the next meeting.

Dick Warburton



"Naah — He's not that smart. He won't back up his hard disk, forgets to consistently name his files, and he drools all over the keyboard."

TIsHUG SHOP
with Percy Harrison

Well, here we are in the first issue of TND for 1993 so I would like to wish you all a very happy and prosperous new year and hope that you will all remain with the club as your subscriptions fall due.

The TI Faire was a huge success with quite a number of local members in attendance and also members from Queensland, Victoria and Western Australia. We had a reasonable level of sales and a number of our members went home very pleased with their purchases. Sales of T-shirts however was somewhat disappointing so anyone looking for a souvenir of the Faire please consider purchasing one of these- only $11 each.

I wonder how many of our members read my column in the December issue and have thought about the suggestion that we open the club up to IBM Compatable Computer users. If you have not already read it may I suggest that you do take five minutes to do so and let us have your thoughts about this most important proposal. Unfortunately the Coordinators report did not reach the Editor in time to be included in that issue but with a little luck it will be covered in this one.

Larry Saunders has now caught up with his new task of preparing the master software disks for release each month and you will find a write-up of the releases for December and Jan/Feb in this issue. Larry has decided to change the numbering system and has introduced one that will indicate to you the type of programs on each disk, identifiable by the prefix letter as follows:

AT.....TI Artist Files etc.
AV.....Adventure Files etc.
G.....Disk of Games
P.....Page Pro Files etc.
U.....Utilities etc.

The numbers will start at 001 and run consecutively regardless of the letter prefixes so in future it will be much easier for you to know if you have missed out on any releases.

This month I am listing the Software disks that are readily available from the shop and next month I will list the Modules that are available.

CLUB SOFTWARE DISKS.

G001 Module Games #1 SSSD $2
G002 Module Games #2 SSSD $2
U003 Utilities Disk #1 SSSD $2
P004 Page Pro Pics #1 SSSD $2
AT005 TI Artist Pics #1 SSSD $2
G006 Module Games #3 SSSD $2
G007 Module Games #4 SSSD $2
G008 Games #5 SSSD $2
G009 Games #6 SSSD $2
AV010 Adventure Games #1 SSSD $2
P011 Page Pro Pics #2 SSSD .....#2
A119 J P Drawing Vers 3.0 DSSD $2
A145 Adventures (Scott Adams) DSSD $2
A245 Telco Vers 2.3 DSSD $2
A261 Assembly Language Games SSSD $2
A386 Boot (Hard Disk Vers) SSSD $2
A401 Pix Version 1.2 SSSD $2
A411 Miner/49er, Espial SSSD $2
A417 TI Utilities #2 SSSD $2
A420 Atari Games #1 SSSD $2
A430 Configuring Funnelweb SSSD $2
A431 Object Linker Vers 3.0 SSSD $2
A432 MM Utility V1 SSSD $2
A438 More Assembly Games SSSD $2
A448 Tips Vers 1.7 SSSD $2
A448A Tips Graphics #1 SSSD $2
A448B Grips (Tips Companion) SSSD $2
A450 Funnelweb 4.40 DSDD $2
A450A Funnelweb 4.40 (3 Disks) SSSD $4
A457 Anna Magdalene Music SSSD $2
A465 Lute Music SSSD $2
A466 Best of DOM #5 DSSD $2
A467 The Singing TI SSSD $2
A468 Speech #1 SSSD $2
A472 TI Writer Supplement SSSD $2
A473 DM 1000 Version 5.0 SSSD $2
A474 GIF Pictures (80 column card) DSDD $2
A475 Clubline 99 Vol 4 No 8 SSSD $2
A476 Clubline 99 Vol 5 No.5 SSSD $2
A481 Artconvert DSSD $2
A481A Artconvert (2 Disk Set) SSSD $3
A482 Horizon Utilities SSSD $2
A483 TI Tiler SSSD $2
A484 Mac-labels SSSD $2
A485 YEO SSSD $2
A486 Genealogy Record Keeping DSSD $2
A487 XHI (80 column card) DSDD $2
A488 Utilitied LA 99ers SSSD $2
A489 Fontart #1 SSSD $.....$2
A490 Fontart #2 and #3 DSSD $2
A491 Designing Graphic Screens SSSD $2
A492 Microkey SSSD $2
A493 Disk Manager 99 Vers 2.0 SSSD $2
A494 XB #0 Money Money SSSD $2
A495 Directory SSSD $2
A504 The Director SSSD $2
A505 Sorting DSSD $2
A506 Memory Manager SSSD $2
A507 Implanting SSSD $2
A508 Booklet SSSD $2
A509 Girlie Calendar DSDD $2

TCC1 Tigercub Collection #1 SSSD $2
TCC2 Tigercub Collection #2 SSSD $2
TCC3 Tigercub Collection #3 SSSD $2
TCC4 Tigercub Collection #4 SSSD $2
TCC5 Tigercub Collection #5 SSSD $2
TCC6 Tigercub Collection #6 SSSD $2
TCC7 Tigercub Collection #7 SSSD $2
TCC8 Tigercub Collection #8 SSSD $2
TCC9 Tigercub Collection #9 SSSD $2
TCC10 Tigercub Collection #10 SSSD $2
TCC11 Tigercub Collection #11 SSSD $2

TC820 Health and the Human Body SSSD $2
TC830 Physics SSSD $2
TC850 Chemistry SSSD $2
TC860 Astronomy Disk #1 SSSD $2
TC890 Teacher's Helper SSSD $2
TC911 Display Calculator SSSD $2
TC990 Sports (Requires XB) SSSD $2
TC1015 Word Processing Utilities SSSD $2
TC1102 Sorts,Scrambles,Searches SSSD $2
TC1119 Hardware Utilities #1 SSSD $2
TC1120 Sound Effects SSSD $2
TC1122 Screen Fonts-Peterson DSDD $2
TC1131 Gemini Printer Utilities SSSD $2
TC1145 Telecommunications SSSD $2
TC1210 Graphics Printing SSSD $2
TC1211 TI Artist Pictures #1 SSSD $2
TC1212 TI Artist Pictures #2 SSSD $2
TC1213 TI Artist Pictures #3 SSSD $2
TC1219 R Kazmer's Xmas Card SSSD $2

Bye for now.

ASSEMBLY CLASS
by Ross Mudie

The next assembly class will be held on Saturday, 6th February, 1993.

Any members having problems with programming in Assembly are very welcome to send the Assembly program that you are having problems with to me for help. Send your source file and a description of your problem etc as mail to SYSOP. Please include your phone number (day time if practical) and after hours so I can ring you to discuss the problem if necessary.

WORD PROCESSING PART 2

by Col Christensen
Brisbane User Group

In Part 1 I covered quite a number of keystroke functions that were necessary to know to get started in word processing. I hope you have practised all these and are fairly conversant with the procedures for each so that their use comes automatically as you encounter a need for them. Part 2 will deal with some of the Command mode functions of the WP.

LINES

The L command will display the four lines options: Move, Copy, Delete and Show lines. To execute any one of them you do not have to go to Lines first, just go directly to it in the command mode by typing M, C, D or S then pressing <ENTER>.

COPY and MOVE

This is the cut and paste function used by our WP. The main difference between the two is that the COPY function leaves the original text intact and merely makes a copy somewhere else while the MOVE deletes the original section after making the copy. It is, unfortunately, restricted in its use to only whole lines of text. This is a slight drawback but the limitation can be overcome with a little extra effort.

To effect a COPY or a MOVE, you need to know the first line number and the last line number of the section to be copied or moved, and the line number after which the text is to be placed. Escape to the command mode and type C to copy or M to move and press <ENTER>. The prompt, "start line, stop line, after line" appears. Suppose you want to copy lines 19 to 24 inclusive and place them after line 16. You now type your line numbers in either of two ways, whichever you are more comfortable with. You can type 19,24,16 with commas to separate each or 19 24 16 using spaces instead, then press <ENTER>. After a brief delay depending on how much text has to be manipulated it will be done and your cursor will be ready waiting for you. Try out both the Copy and the Move and check the text to convince yourself that what you wanted to happen actually did.

Note that the WP will not allow you to copy or move text to a line number that is not currently existent. Suppose your text so far ends at line number 41. You can move text after line 41 but not after line 42 or higher. Note also, and this applies to most places where line numbers are involved, that line number 0 is valid and indicates the first line or before line 1 and line number E (for End) indicates the last line. So, in a MOVE, an entry such as 68,E,0 will move lines 68 to the end of your text and put them before line 1. Note thirdly that when you COPY some lines of text, you will end up with a larger number of lines than before, but if you MOVE lines, the final line count will be the same as before.

Now suppose you want to move, say, a long sentence and place it in a different position in your text. The sentence will be sure to start and end somewhere in the middle of a line. Murphy's Law makes sure of that. As the lines commands operate only on entire lines, we have a few extra steps to do. The idea is to use the insert keystroke to split both the start and ending lines so that the complete sentence and nothing else occupies a unique set of line numbers ready for moving. You also need to split the line into which the insertion must go.

I will not go into detail on the steps to follow to effect a MOVE but leave it for you to sort out. But just one little pointer though. When you use the insert keystroke to split lines of text and wish to move the cursor down the screen, do so with the arrow keys and not the <ENTER> which will leave a ↵ symbol that you most likely do not want. By all means use the <ENTER> key after the insert if you want that point eventually to be the end of a paragraph.

MORE ON REFORMATTING

Now that you are making insertions and moves within a paragraph and leaving a mess in the text buffer and on the screen you will probably like to tidy things up by reformatting. What I want to impress is that it is not necessary to go way up to the beginning of a paragraph to do this. Just move the cursor to a point anywhere before the mess, press insert (FCTN/2) and press reformat (CTRL/2).

Although this section relates to tab settings, it has a bearing on reformatting too, for, as I explained before, reformatting takes place between the left and right tab settings. Tony McGovern has incorporated dual TAB sets into the later versions of our WP. You can now have one set of tabs for part of your document and different tab settings for another part. Both sets of tabs will be saved to disk with your document and retrieved again the next time you load it into memory. To change the tabs, escape to the command mode and type ST (swap tabs). If the alternate set had not been set up, do so now, and press <ENTER> to accept the new set. The screen format and reformatting will follow the new tab settings. To revert to the other tab setting at some point in the text, escape to the command mode, type ST and press <ENTER> twice, one to accept the "ST" input and one to accept the tab settings. It is so simple to make the change over and is a very useful addition to the WP.

MARGIN RELEASE (CTRL/Y).

The cursor movement is limited by the tab margin settings so that it can only move within the left and right margins. If you find a need, however, to move the cursor outside these settings, it can be done on the next keypress after pressing CTRL/Y. In other words you need to move the cursor to the margin you wish to cross, press CTRL/Y and then the appropriate arrow key.

DELETE LINE

Normally you would delete a line or two of text by using FCTN/3 but there are times when a large number of lines have to be deleted. This is done in the command mode after typing D and pressing <ENTER>. The prompt, "start line and stop line" tells what to do. Separate the relevant line numbers with either a comma or a space and press <ENTER> when you are sure you have typed the numbers correctly. OOPS will not help you recover from an error here. Tony has greatly improved the speed of the delete function in later versions.

SHOW LINE

The S command allows you to control which line numbers will appear at the top of the screen. Suppose the assignment you are writing is nearing 500 lines in length and you want to refer back to the first paragraph. SHOW will speed up the process of displaying it for you. Escape to command mode, type S and press <ENTER> and type a suitable line number. That part of the text will appear the instant you press the <ENTER> key. The line number, E for End, is valid and quickly shows the very last line of your work. Roll down (FCTN/4) and Roll up (FCTN/6), remember, also move the text up or down 24 lines at a time.

That is all for now. In Part 3, the Search function will be discussed and there will be details on File Handling. Also we can make a start in using the Text Formatter to make our printouts look more professional.

Before we go, in case you do not have them, here is a list of the top row key presses that appear on the keyboard overlay and also a list of other key press combinations.

Continued on Page 7

Nostalgia Time
by Geoff Trott

During all the sorting out of some of the treasured belongings before the handing over the reins of director, I put together all the issues of the TND I had and found they started from February 1983 to the present. I decided that I would start to read these to see what interesting things I could find and then I thought that this would be a good thing to share with you all (or is there only one other reader, it is hard to tell from the response). So I decided that I would start this series of general interest articles describing what is in each issue of the newsletter from February 1983 onwards.

I then thought carefully about this. The last time I started a series which tried to inform readers about what was in other groups' newsletters, I invoked a wail of pain from South Australia and some murmured agreement from the Hunter Valley that it was not fair to criticise newsletters. So I am now giving a disclaimer. I am attempting to describe the look, layout and content of the newsletters without any critical intent. I will try to avoid using any adjectives which could cause offense and if anyone takes offense then that is purely their interpretation of the words and not my intention. I hope that makes it clear and that no one will be offended.

To start at February 1983. This is printed on white paper, the same width but slightly shorter than A4, with a picture of a young person holding a joystick and pushing a button with clenched teeth on top of a computer printout of a chess game on a 6 by 8 chess board showing all the pieces and a line of text underneath "Now it's your move, so over to you...". The heading says "T.I.S.H.U.G. SYDNEY NEWS DIGEST Newsletter of the Texas Instruments 99/4a Home Computer Users Group-Feb 1983". Even then we were TIsHUG but with a slightly different emphasis. There are 18 pages printed doubled sided (9 sheets of paper) stapled at the top left corner. Let me take you through the contents.

Page 2 is labelled "Profile, by Shane Andersen". Shane was the Editor at this time and was one of the driving forces of the club for the first six years. In this article, which takes up most of the page, he welcomes members to the club's second financial year and reminisces about the previous year's activities which included: a nation wide Software Awards Competition, a full day tutorial/workshop and providing some great software. He announced that Graem Holliss had agreed to provide a Programmers' Action Line at the end of a telephone line. He also announced that Peter Lynden had joined the committee as Co-ordinator of the Education Section of the group. Shane also noted that the membership has doubled to 200 in the previous two months. At the bottom of the page is a short announcement that the TI.S.H.U.G. Logo design competition will close at the March meeting and the winner will receive a copy of the Australian Software Awards winning program, Diablo by Manual Constantinidis.

The club software is listed on page 3. This is provided on cassette, of course, and consists of 6 programs by Manuel Constaninidis, Lindsay Preece (2), Russell Welham, Paul Mansell and one from the Edmonton User Group (Canada). There is a good selection from games through music to a data base type of program. Club software was provide free at the meetings by bringing along a cassette to swap for one with the club software on it. There were two librarians, Antony Lewis and Elliot. At the bottom of the page is speculation that a New Zealand group was about to start with the owner of a computer shop in Wellington buying a TI99/4A.

On the next page is a calendar for 1983, the notice of the next meeting at St. John's Church Hall in Darlinghurst and some pictures and graphics. Shane was always great with the pictures to fill in white space. One of them is a photograph showing someone playing Video Chess on the TI99/4A. Page 5 is the Younger Set with Jenny. There is a letter from Chris who has reached the 9th floor on Tunnels of Doom and lists the 51 monsters he has found. Jenny then gives a program to allow you to protect your program with a password. There is a list of 4 shops which gave a 5% discount to club members, an advertisement to sell modified Atari joysticks and the Club address at PO Box 149, Pennant Hills. Does any of this bring back memories?

On page 6 is a new column by Peter Lynden about the use of computers in education. He basically appeals for ideas for computer aided learning (CAL) and gives three references to articles on the subject. The next two pages are from the Central Ohio User Group and have some interesting tips on programming. First a BASIC program is shown which takes input from the arrow keys to move a graphics character around the screen which takes 22 lines of code. Another program follows to do the same thing in only 5 lines of code. There is a music program from Jim Peterson, a way to find the size of memory and hints on writing programs to save memory. We are still exchanging newsletters with the Central Ohio Group.

On page 9, Geoff Patterson gives some hints about using MiniMemory with 32K memory to put a large assembler program in the memory expansion. The assembler program is entered using the line by line assembler. The next page contains a listing of a painting and drawing BASIC program which was an entry in the software competition. The remaining 8 pages contain an article (2 pages) and program listing (4 pages) of a disassembler (in BASIC) followed by an example of disassembled code (2 pages), all from Geoff Patterson. I think I may have used this program and found it quite good. The code to be disassembled must be in memory. The program will work with the MiniMemory or Extended BASIC cartridges.

That was an interesting issue in an unusual format. The next issue I have is called the April 83 issue as is the one which appears to follow it. From the contents, I believe that one is in fact the May issue (which would have been prepared in April) and that I am missing the March issue. The February to May issues have a similar banner on the front page but the familiar logo makes its appearance on the May 1983 issue (falsely labelled April 1983) alond side this banner. The April issue is 14 pages long on single sheets of foolscap paper while the May issue is A5 in size, made by printing on A4 paper and folding into a booklet. The June 1983 issue starts the A4 size booklet that we have maintained to the present, with the club's logo in the top left hand corner.

The April issue shows that an annual general meeting must have taken place as there were now a number of office holders. These were: Brian Lewis as acting co-ordinator; John Robinson as secretary; Terry Phillips as treasurer; Shane Andersen as editor; Manual Constantinidis as librarian; Graem Hollis on the crisis line; Peter Lynden as education co-ordinator; and Peter Varger as assistant chairperson. The editorial from Shane appears on the cover and mentions the Perth User Group (TI-UP) and Bernie Elsner, the International Users' Group, the Ohio Users Group and the Arkansas Users' Group (John Volk). Shane also mentions user groups in Brisbane, Melbourne, Adelaide and Tasmania. In the editorial Shane states, "John & I have been good friends since I created the User Group in Sydney over 2 years ago." That would seem to define the start of the group rather nicely! The editorial ends by saying that Milton Bradley are coming to Australia and that Thorn-EMI and Toltoys had started to produce software for the TI99/4A. The rest of the issue appears to be from other sources with most of it from TI-UP. There is some very interesting stuff included.

Thre are a number of BASIC programs to show: some printing tricks (Jim Peterson); creating cassette data files (pioneer Valley Users Group); retrieve library data files from cassette (Ohio); using the RND function (Ohio); creating windows (Lindsay Preece); playing

Continued on Page 7

TI BITS No. 21
By Jim Swedlow

[This article originally appeared in the User Group of Orange County, California ROM]

This month we have two programs and a few programming notes.

PHONE

This program was originally written for another machine by James R. Lewis in 1979. It lists all alpha combinations possible from a seven digit phone number. For example, 653-8697 could be OLDTOYS.

It takes a while because there are up to 2,187 permutations. There are less if the phone number has a zero or a one, as there are no alpha equivalents for these numbers. You can print your output to the screen or to your printer.

From a programming viewpoint, the interesting code is in lines 180 and 220 where the input is validated.

The first issue is to determine if the output will go to the screen or the printer. The user is asked to input <S> for screen or <P> for printer. The trick is to figure out if the input is <S>, <s>, <P>, <p> or something else. POS is used for this function:

```
Y=POS("SsPs",A$,1)
```

This will return the following values:

A$	Y
S	1
s	2
P	3
p	4
Any Thing Else	0

The next step is to see what POS returned. This is done with an IF test:

```
IF Y THEN Y=-(Y>2) ELSE 170
```

Lets look at this in parts. <IF Y THEN> will return TRUE if Y is not zero and FALSE if Y is zero. If Y is zero, the user gave an invalid choice and, using the ELSE clause, the program returns to line 170 to ask for input again.

If, on the other hand, Y is not zero, it can be 1, 2, 3 or 4. We want to have Y set to zero if the input was <S> or <s> and one if it was <P> or <p>. The values are:

A$	Y	Set Y to
S	1	0
s	2	0
P	3	1
p	4	1

We do it this way:

```
Y=-(Y>2)
```

If Y is greater than 2, then (Y>2) returns -1 and the leading minus sign turns it into one. If Y is less than three, (Y>2) is false and returns zero, which is what we want. There is no difference between 0 and -0.

Later on (line 340, for example), the program uses code like this:

```
PRINT #Y:
```

If Y is zero, the output goes to the screen. If it is one, it goes to your printer. Saves duplicate print lines.

Line 220 has this code:

```
IF B$<"0" OR B$>"9" THEN
```

You have probably used less than and greater than with numbers. They also work with strings. They compare the ASC value of the items on either side of the sign. In the above test, any digit will return FALSE and anything else will return TRUE because, in ASC, the digit order is "0123456789".

MAZE

This program will print mazes from very simple ones (level 0) to very complex ones (level 9). There are two bits of code worth discussing.

In line 240, you see this:

```
IF W AND 1 THEN
```

This tests to see if W is even or odd. The results are:

```
IF W AND 1 THEN <W IS ODD>
           ELSE <W IS EVEN>
```

You will also see similar code in lines 310 and 320. This is a neat trick that lets one variable serve a number of purposes. To figure it out, however, you will have to get the book that came with Miller's Graphics "Night Mission". Lots of good stuff in that book!!!

```
100 ! PHONE
110 ! BASED ON A PROGRAM
120 ! BY JAMES R. LEWIS
130 ! JIM SWEDLOW
140 ! JULY 1, 1989
150 !
160 CALL CLEAR :: CALL CHAR(48,"0038444C54644438")
170 PRINT : :"OUTPUT TO <P>RINTER OR <S>CREEN";
180 INPUT A$ :: Y=POS("SsPp",A$,1):: IF Y THEN Y=-(Y>2)E
    LSE 170
190 IF Y THEN OPEN #1:"PIO"
200 PRINT : :"INPUT YOUR TELEPHONE NUMBER DO NOT USE A -
    FOR EXAMPLE, 6538697";
210 INPUT A$ :: IF LEN(A$)<>7 THEN 200
220 FOR I=1 TO 7 :: B$=SEG$(A$,I,1):: IF B$<"0" OR B$>"9
    " THEN 200 ELSE Z(I)=VAL(B$)
230 NEXT I :: PRINT
240 FOR A=0 TO -2*(Z(1)>1):: H(1)=A
250 FOR B=0 TO -2*(Z(2)>1):: H(2)=B
260 FOR C=0 TO -2*(Z(3)>1):: H(3)=C
270 FOR D=0 TO -2*(Z(4)>1):: H(4)=D
280 FOR E=0 TO -2*(Z(5)>1):: H(5)=E
290 FOR F=0 TO -2*(Z(6)>1):: H(6)=F
300 FOR G=0 TO -2*(Z(7)>1):: H(7)=G
310 FOR I=1 TO 7
320 PRINT #Y:SEG$("000111ABCDEFGHIJKLMNOPRSTUVWXY",Z(I)*
    3+H(I)+1,1);
330 NEXT I :: X=X+1
340 PRINT #Y:" ";:: IF Y=0 THEN W=W+1 :: IF W=3 THEN PRI
    NT :: W=0
350 NEXT G :: NEXT F :: NEXT E :: NEXT D
360 NEXT C :: NEXT B :: NEXT A
370 PRINT #Y: : : :"TOTAL WORDS: ";X :: IF Y THEN CLOSE
    #1
```

```
100 ! MAZE
110 ! BY STEVE KARASEK
120 ! MODIFIED BY J. SWEDLOW
130 ! JULY, 1989
140 !
150 DATA 19,4,9,8,6,12,4,16,4,19,3,24,2,28,2,32,2,36,2,3
    9
```

```
160 RANDOMIZE :: DIM M(40,40):: INPUT "HOW MANY MAZES?":
    Z :: PRINT
170 INPUT "LEVEL OF DIFFICULTY?":L :: IF L<0 OR L>9 THEN
    170 ELSE OPEN #1:"PIO"
180 DISPLAY AT(10,11)ERASE ALL:"LEVEL ";L: :TAB(9);"Init
    ializing"
190 FOR X=0 TO L :: READ S,N :: NEXT X
200 FOR X=1 TO N :: FOR Y=1 TO N :: M(X,Y)=0 :: NEXT Y :
    : NEXT X
210 FOR X=1 TO N :: M(N+1,X),M(X,N+1),M(0,X),M(X,0)=16 :
    : NEXT X
220 C,X,Y=1 :: DISPLAY AT(12,9):" ";"1 /";N^2
230 RANDOMIZE :: W=INT(RND*4):: DX=X+(W=0)-(W=1):: DY=Y+
    (W=2)-(W=3):: IF M(DX,DY)THEN 230
240 M(X,Y)=M(X,Y)+2^W :: IF W AND 1 THEN W=W-1 ELSE W=W+
    1
250 X=DX :: Y=DY :: M(X,Y)=M(X,Y)+2^W :: C=C+1 :: DISPLA
    Y AT(12,9)SIZE(4):USING "###
    #":C :: IF C=N*N THEN 280
260 IF M(X+1,Y)=0 OR M(X,Y+1)=0 OR M(X,Y-1)=0 OR M(X-1,Y
    )=0 THEN 230
270 RANDOMIZE :: X=INT(RND*N)+1 :: Y=INT(RND*N)+1 :: IF
    M(X,Y)THEN 260 ELSE 270
280 DISPLAY AT(12,9):" Printing" :: PRINT #1:CHR$(27);"
    1":"Start";TAB(30);"Level: " ;L
290 PRINT #1 :: PRINT #1:"#";TAB(S+1);RPT$("#",S*(N-1)+1
    ):: S=S-1 :: S$=RPT$(" ",S):: X$=RPT$("#",S)
300 M(N,N)=M(N,N)+8 :: FOR Y=1 TO N :: FOR W=1 TO S :: P
    RINT #1:"#";:: FOR X=1 TO N :: PRINT #1:S$;
310 IF M(X,Y)AND 2 THEN PRINT #1:" ";ELSE PRINT #1:"#";
320 NEXT X :: PRINT #1 :: NEXT W :: PRINT #1:"#";:: FOR
    X=1 TO N :: IF M(X,Y)AND 8 THEN PRINT #1:S$;ELSE PRI
    NT #1:X$;
330 PRINT #1:"#";:: NEXT X :: PRINT #1 :: NEXT Y :: S=S+
    1 :: PRINT #1: :TAB(S*N-4);"Finish":CHR$(12):: Z=Z-1
    :: IF Z>0 THEN 200
```

Continued from Page 5

sounds two octaves below the smallest notes of the sound generator (Jim Peterson); playing tremolo notes (Jim Peterson); "world's shortest tic-tac-toe program" (Russ Walker); a walking man (Roger Wills); a glimpse of reality for computer addicts (Phil West); print the circumference of a circle; multi-column printing of listings; and BASIC versions of ACCEPTAT and PRINTAT.

There are also two extended BASIC programs, one a very clever way to use sprite motion to provide the basic time for a clock (Rick Mirus, Cin-Day user group) to be used while a program runs and the other a long program which is the demonstration program for the Tandy Colour Printer. The clock program is neat as it uses the motion of a sprite, which is controlled by the VDP interrupt (at 20 milliseconds) to give accurate time no matter what the program may be doing. I have seen this done with an assembler program, but this is all in BASIC.

There is some news from the Las Vegas CES show at the end of 1982 at which time the TI99/4A had not been released. The big news were the two new computers, the 99/2, a cheapie, and the CC-40. The HEX-BUS adapter for the TI99/4 was all that was mentioned along with the Milton Bradley game adapter. TI also announced a PC clone with voice recognition. (It was not a very close clone when it did appear.) There was an article on the Plato courseware which was not very complementary and questioned whether it would make an impact at the price.

Other articles from TI-UP include: generating 3D plots (from Tidings, UK); a mystery program competition, which included three programs along similar lines of producing noises; how to change a TI99/4 to allow sprites to be shown by changing the VDP processor; listing programs to disk or MiniMemory (EXPMEM2 or MINIMEM; developing faster printat routines in BASIC; and a large article with a listing of the Minimemory LINES program dissassembled and commented.

Well, that covers the first two magazines and I really enjoyed reading them for you. If you want more information about any of the articles or programs mentioned, contact me somehow and I will do my best. You could also read the newsletters in the club's library.

Continued from Page 4

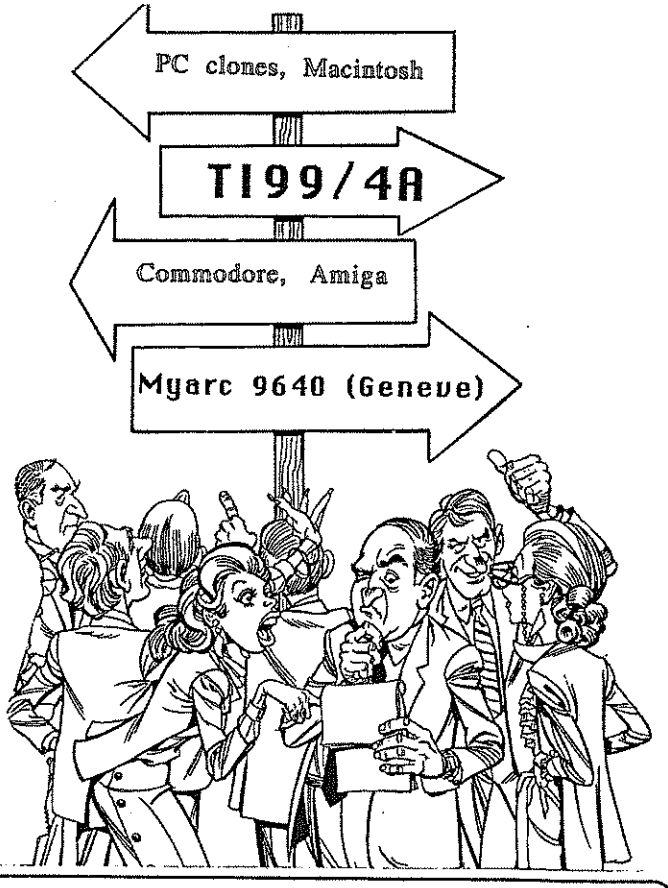
TABLE OF KEYPRESSES

1. Shown on the keyboard overlay.

FCTN	CTRL
1 Delete Char	1 Oops!
2 Insert Char	2 Reformat
3 Delete Line	3 Screen colour
4 Roll Down	4 Next Paragraph
5 Next Window	5 Duplicate Line
6 Roll Up	6 Last Paragraph
7 Tab	7 Word Tab
8 Insert Line	8 New Paragraph
9 Command/Escape	9 New Page
0 Line Numbers	0 Word Wrap
= Quit/Escape	= No action

2. Duplicate keystrokes and additional new ones.

CTRL/T Back Tab	
CTRL/V Beginning of Line	
CTRL/C Command/Escape	= FCTN/9
CTRL/F Delete Char	= FCTN/1
CTRL/K Delete End of Line	
CTRL/N Delete Line	
CTRL/X Down Arrow	= FCTN/X
CTRL/L Home Cursor	
CTRL/O Insert Line	= FCTN/8
CTRL/G Insert Char	= FCTN/2
CTRL/H Last Paragraph	= CTRL/6
CTRL/S Left Arrow	= FCTN/S
CTRL/Y Margin Release	
CTRL/P New Page	= CTRL/9
CTRL/M New Paragraph	= CTRL/8
CTRL/J Next Paragraph	= CTRL/4
CTRL/Z Oops!	= CTRL/1
CTRL/R Reformat	= CTRL/2
CTRL/D Right Arrow	= FCTN/D
CTRL/A Roll Down	= FCTN/4
CTRL/B Roll Up	= FCTN/6
CTRL/I Tab	= FCTN/7
CTRL/E Up Arrow	= FCTN/E
CTRL/W Word Wrap	= CTRL/7



Author Index 1992

Author	Title	Description	Page No.
Alexandersson,Jan Sweden	Digit AVPC 80 column card	Hardware review	7.05
	Quad density disks	Hardware review	9.21
	XHi graphics program	Hardware review	9.15
Banfield,J.E.	Contributions to TND	General interest	4.15
	Why I write machine code	General interest	4.15
	Writing in machine code	Software hints	5.11
	Writing in machine code	Software hints	6.26
	Writing in machine code	Software hints	7.22
	Writing in machine code	Software hints	8.21
	Writing in machine code	Software hints	9.22
	Writing in machine code	Software hints	10.20
	Writing in machine code	Software hints	11.18
Brown,Robert	Computaholics exam	General interest	7.19
	Games info series 2	Zork 1	4.07
	Games info series 2	Zork 2	3.11
	Letter to editor	Games info	3.02
	Talking about modems	Hardware hints	3.18
Brubaker,Ron USA	Sorting, part 3	Software hints	1.19
	Sorting, part 4	Software hints	3.24
	Sorting, part 5	Software hints	4.20
	Sorting, part 6	Software hints	5.15
Burns,Steve USA	Default filing	General interest	8.16
Christensen,Col Brisbane	Cadet console expansion	Hardware review	8.07
	Word processing part 1	Word processing	11.05
Christensen,Garry Brisbane	Algorithm design	Software hints	8.09
Dunn,Craig England	Harnessing the power of speech	Software hints	7.14
Freuh,Andy OH,USA	How to use arrays	Software hints	5.18
	Sprites	Software hints	10.10
Gaskill,Bill CO,USA	Right justified text	Software hints	8.12
	Title screen for TI-Base	Data base	8.18
Good,Charles OH,USA	Scott Foresman math series	Software review	5.12
	Scott Foresman reading modules	Software review	9.10
Green,R.A. Ontario	Look at memory	Software review	11.20
	Look at PRK module	Software review	9.17
Grimmond,Jim Hunter Valley	Genealogical data base	Review	4.02
Hall,Ed CA,USA	Control of CS1	Software hints	1.12
Harris,Daniel	Talking book	General interest	3.26
Harrison,Bruce MD,USA	STRACC routine for reformatter+	Software hints	6.23
Harrison,Percy	Alien attack	Software review	11.02
	TIsHUG shop report	Club news	1.03
	TIsHUG shop report	Club news	2.04
	TIsHUG shop report	Club news	3.05
	TIsHUG shop report	Club news	4.04
	TIsHUG shop report	Club news	5.05
	TIsHUG shop report	Club news	6.03
	TIsHUG shop report	Club news	7.03
	TIsHUG shop report	Club news	8.04
	TIsHUG shop report	Club news	9.03
	TIsHUG shop report	Club news	10.07
	TIsHUG shop report	Club news	11.02
Hoddie,J.Peter MA,USA	Screen dump routine	Software hints	1.26
Hoyt,Harold MO,USA	TI-Writer formatter tip	Word processing	3.10
Johnson,Ed USA	Page Pro 99	Software review	2.19
	Page Pro high res picture printing	Software review	2.20
	Page Pro quick reference guide	Software review	2.20
Lesher,Jim PA,USA	TI-Writer replace string	Word processing	3.07
Mac,C Hunter Valley	Prime number generator	Software hints	3.21
Maker,Vincent	Younger set	Greetings, adventure	11.16
	Younger set	Programs	1.10
	Younger set	Programs	3.22
	Younger set	Programs	5.05
	Younger set	Quiz	7.21
Marin,Stanculescu Romania	Letter to editor	Software wanted	4.03
McCormick,Mack USA	Sprite tutorial	Software hints	8.19
McGovern,Tony Hunter Valley	Funnelweb editor v5.00 beta note	Word processing	6.08
Mudie,Ross	Amateur radio log	Data base	2.11
	Arrow keys in XB programs	Software hints	4.16
	Assembly class for 1992	Software hints	1.02
	Assembly class for 1992	Software hints	2.18
	Assembly class for 1992	Software hints	3.24
	Assembly class for 1992	Software hints	4.03
	Assembly class for 1992	Software hints	6.18
	Assembly class for 1992	Software hints	7.03
	Assembly class for 1992	Software hints	9.09
	Assembly class for 1992	Software hints	11.19
	Communicators	BBS information	2.13
	Communicators	BBS information	8.05
	Communicators	BBS information	10.09
	DSCAN correction	Correction	3.16
	Endurance horse ride and 99/4A	General interest	9.04
	Getting started #1	Software hints	11.03
	Link-It #21	Software hints	1.25
	Struck by lightning	General interest	3.08
	Use of REF in assembly	Software hints	11.19
Peterson,Jim OH,USA	Clearinghouse BBS	General interest	8.02
	Computers in education	General interest	7.02
	I wish ...	General interest	9.12
	Letter to editor	Reformatter+ correction	6.16
	My genealogy program	Software hints	11.26
	Programming music part 1	Software hints	3.23
	Programming music part 2	Software hints	5.13
	Programming music part 3	Software hints	9.13
	Programming music part 4	Software hints	10.15
	Programs to type in	Software	3.13
	Reformatting	Word processing	4.17
	The home computer	General interest	9.20
	TI99/4A world news	General interest	1.06
	TI99/4A world news	General interest	2.17
	TI99/4A world news	General interest	6.06
	Tigercub Printall v1.6	Software review	7.12
	Tigercub programmable calculator	Software review	6.17
	Tigercub reformatter+ v1.2	Word processing	3.09
	Tips from the Tigercub #63	Software hints	7.11
	Tips from the Tigercub #64	Software hints	8.11
	Tips from the Tigercub #65	Software hints	11.07
	Tips from the Tigercub #66	Software hints	10.11
	Tips from the Tigercub #67	Software hints	11.13
	Vapourware, slowware or no ware	General interest	2.14
Phillips,Terry	6th AGM agenda	Club news	10.02
	Minutes of 5th AGM	Club news	10.05
	Minutes of special GM	Club news	10.05
	Notice to members	Club news	10.02
	Secretary's notebook	Club news	1.02
	Secretary's notebook	Club news	2.03
	Secretary's notebook	Club news	3.02
	Secretary's notebook	Club news	4.03
	Secretary's notebook	Club news	5.03
	Secretary's notebook	Club news	6.02
	Secretary's notebook	Club news	7.02
	Secretary's notebook	Club news	9.03
	Secretary's notebook	Club news	10.02
Pratt,Chris PA,USA	TI-Image maker	Hardware review	5.04
Raguse,Earl CA,USA	Beginning Forth #12	Software hints	1.29
	Beginning Forth #13	Software hints	2.21
	Beginning Forth #14	Software hints	3.25
	Beginning Forth #15	Software hints	4.26
	Beginning Forth #16	Software hints	5.21

Author	Title	Description	Page No.
Raguse,Earl CA,USA	Beginning Forth #17	Software hints	6.25
	Beginning Forth #18	Software hints	7.21
	Beginning Forth #19	Software hints	8.20
	Beginning Forth #20	Software hints	9.19
	Making a TIPS label letter form	Software hints	7.18
Relyea,Bob	Arrow keys in XB programs	Software hints	4.16
	Cataloguing disks in XB	Software hints	7.10
	Editor's comment	General interest	1.01
	Editor's comment	General interest	2.01
	Editor's comment	General interest	3.01
	Editor's comment	General interest	4.01
	Editor's comment	General interest	5.01
	Editor's comment	General interest	6.01
	Editor's comment	General interest	7.01
	Editor's comment	General interest	8.01
	Editor's comment	General interest	9.01
	Editor's comment	General interest	10.01
	Editor's comment	General interest	11.01
	Newsletter update	General interest	1.30
	Newsletter update	General interest	3.26
	Newsletter update	General interest	5.22
	Newsletter update	General interest	7.14
	Newsletter update	General interest	8.22
	Newsletter update	General interest	11.27
	Number base converter	Software hints	1.30
	Page Pro 99 and utilities	Software review	3.06
	Printing line numbers with TIW	Software hints	1.08
	Publication index for TI-Base	Software review	1.23
Richardson,Wesley OH,USA	Appending to DV/80 files	Software hints	4.24
	Crazy extended BASIC	Software hints	9.11
Ruggeri,Alf	GIF mania	Software review	2.07
Schaefer,Mark USA	PRINT USING	Software hints	10.13
	File protocol	Software hints	8.06
Schreiber,Rolf	GIF file transfer	Software hints	2.10
	TIsHUG software column	Club software	1.04
	TIsHUG software column	Club software	2.05
	TIsHUG software column	Club software	3.03
	TIsHUG software column	Club software	4.05
	TIsHUG software column	Club software	5.06
	TIsHUG software column	Club software	6.04
	TIsHUG software column	Club software	7.04
	TIsHUG software column	Club software	8.03
	TIsHUG software column	Club software	10.08
Scorpia USA	Hollywood Hijinx part 2	Games review	1.13
	Hollywood Hijinx part 3	Games review	3.17
Shaw, Stephen England	Fractal graphics with TML	Software hints	1.21
	Hints, tips and answers	Software hints	1.09
	Printer graphics with TML	Software hints	1.18
	Programs	Software hints	7.07
	Riemann sphere graphics, TML	Software hints	4.23
	Myart	Software review	11.25
	Programming tips and reviews	Software hints	6.19
	Rambles	Software hints	10.06
Slattery,Mike	Trace subroutine	Software hints	11.11
Slicer,Jesse USA	Notes on DSCAN, DSR scanner	Software review	2.03
Smoley,Martin OH,USA	TI-Base tutorial #16	Data base	5.19
	TI-Base tutorial #17	Data base	6.21
	TI-Base tutorial #18	Data base	7.17
	TI-Base tutorial #19	Data base	8.17
	TI-Base tutorial #20	Data base	11.23
Stringfellow,James France	TI-Writer font maker	Software hints	3.04
Swedlow,Jim CA,USA	Extended BASIC tips #14	Software hints	1.24
	Extended BASIC tips #15	Software hints	2.16
	Extended BASIC tips #16	Software hints	4.14
	Extended BASIC tips #17	Software hints	5.08
	Extended BASIC tips #18	Software hints	6.14
	Extended BASIC tips #19	Software hints	7.13
	Extended BASIC tips #20	Software hints	8.14
	TI-Bits #13	Software hints	1.11
	TI-Bits #14	Software hints	2.15
	TI-Bits #15	Software hints	4.13
	TI-Bits #16	Software hints	5.07
	TI-Bits #17	Software hints	6.13
	TI-Bits #18	Software hints	7.09
	TI-Bits #19	Software hints	8.13
	TI-Bits #20	Software hints	9.05
	Word count	Program	2.06
Takach,Ben	Decoding EPROM files appendix	Software hints	5.03
	Decoding EPROM files part 3	Software hints	2.22
	Decoding EPROM files part 4	Software hints	3.19
	Decoding EPROM files part 5	Software hints	4.21
	Keeping track of petrol costs	Software hints	8.15
	Modifying the PE box	Hardware hints	11.11
	Modifying the TI99/4A	Hardware hints	11.09
	PEBox extension cable	Hardware review	1.02
	XB tips, features of ACCEPT AT	Software hints	6.15
Tomietto,Mauro Ottawa	Sidewriter version 2.1	Software review	10.17
Traver,Barry PA,USA	TIA instances to Assem link	Software hints	4.22
Trott,Geoff	Funnelweb editor v5.00	Software review	6.07
	GIFviewer and hard disk	Software hints	1.07
	PRINT USING corrections	Software hints	11.17
	Techo time	80 track disks	11.17
	Techo time	Disk interface	1.05
	Techo time	Formatting problems	2.06
	Techo time	MiniPE system	4.10
	Techo time	MiniPE system	8.05
	Techo time	RAMdisks	6.05
	Techo time	RAMdisks, back ups	3.07
	TIPS to instance conversion	Software hints	9.07
	To see or not to c	Software hints	4.11
	To see or not to c	Software hints	5.09
	To see or not to c	Software hints	6.12
	To see or not to c	Software hints	7.15
	To see or not to c	Software hints	10.19
	To see or not to c	Software hints	11.21
	Treasurer's report	Club news	1.08
	Treasurer's report	Club news	2.02
	Treasurer's report	Club news	3.07
	Treasurer's report	Club news	4.02
	Treasurer's report	Club news	5.02
	Treasurer's report	Club news	6.11
	Treasurer's report	Club news	7.03
	Treasurer's report	Club news	8.05
	Treasurer's report	Club news	9.18
	Treasurer's report	Club news	10.09
	Treasurer's report	Club news	11.08
Warburton,Dick	Co-ordinator's report	Club news	2.02
	Co-ordinator's report	Club news	4.02
	Co-ordinator's report	Club news	5.02
	Co-ordinator's report	Club news	6.02
Webb,Bob USA	Keyboard reader	Software hints	3.02
West,Loren	Time check	Software hints	3.15
Zimmerman,Steve PA,USA	Multiplan tips	Spreadsheet	6.18
Author unknown	Author index 1991	General interest	1.14
CA,USA	Extended mouse support	General interest	3.04
OH,USA	Graph paper with TI-Writer	Software hints	1.03
OH,USA	Horizon utilities	Software review	3.22
USA	MAX-RLE documentation	Software review	4.25
	Regional group reports	General interest	1.31
	Regional group reports	General interest	2.23
	Regional group reports	General interest	3.27
	Regional group reports	General interest	4.27
	Regional group reports	General interest	5.23
	Regional group reports	General interest	6.27
	Regional group reports	General interest	7.23
	Regional group reports	General interest	8.23
	Regional group reports	General interest	9.23
	Regional group reports	General interest	10.23
	Regional group reports	General interest	11.27
USA	RemTalk UCSD Pascal utility	Software hints	10.21
	Subject index 1991	General interest	1.16

SUBROUTINES AND SUBPROGRAMS

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SUBROUTINES AND SUBPROGRAMS is a regular department on SUBFILE99 featuring handy TI-BASIC and X-BASIC routines to aid the TI programmer. If you have written some interesting routines, why not send them in to SUBFILE99 and share them with fellow TI'ers?

++++++++++++++++++++++++++++++++++

WORD WRAP AND FILL ROUTINES

Below is a short program that illustrates two very useful routines for handling displays of string data. The first routine automatically right justifies each line of text to give a neat appearance to things like instructions, etc. without having to "count out the spaces."

The second routine will automatically calculate the longest possible portion of the string that can be presented on one line and breaks the line up accordingly. This prevents that annoying break up of words that sometimes occurs when printing long strings.

The actual routines themselves appear first in both BASIC and X-BASIC. A short TI-BASIC demo program follows.

FSUBROUTINES

```
10298 REM  *FILL/B*
10299 REM
10300 FOR XL=1 TO LEN(M$)
10301 IF LEN(M$)=28-XI THEN 10307
10302 IF SEG$(M$,XL,1)<>" " THEN 10305
10303 M$=SEG$(M$,1,XL)&" "&SEG$(M$,XL+1,LEN(M$)-XL)
10304 XL=XL+1
10305 NEXT XL
10306 GOTO 10300
10307 RETURN
10308 REM
10800 SUB FILL(R,I,M$)
10801 FOR X=1 TO LEN(M$)
10802 IF LEN(M$)=28-I THEN 10804 ELSE IF SEG$(M$,X,1)=
      " " THEN M$=SEG$(M$,1,X)&" "&SEG$(M$,X+1,LEN(M$)-X
      ) :: X=X+1
10803 NEXT X :: GOTO 10801
10804 DISPLAY AT(R,29-LEN(M$)):M$
10805 SUBEND
```

WRAP SUBROUTINES

```
12598 REM *WRAP/B*
12599 REM
12600 X1=0
12601 M$=M$&" "
12602 X2=POS(M$," ",X1+1)
12603 PRINT SEG$(M$,X1+1,X2-X1);:: IF X2=LEN(M$)THEN SUB
      EXIT
12604 IF X2=LEN(M$)THEN 12607
12605 X1=X2
12606 GOTO 12602
12607 RETURN
```

```
12598 ! *WRAP/X*
12599 !
12600 SUB WRAP(M$)
12601 M$=M$&" " :: X1=0
12602 X2=POS(M$," ",X1+1)
12603 PRINT SEG$(M$,X1+1,X2-X1);:: IF X2=LEN(M$)THEN SUB
      EXIT
12604 X1=X2 :: GOTO 12602
12605 SUBEND
```

DEMO PROGRAM

```
100 REM ***************
110 REM *               *
120 REM * FILL & WRAP   *
130 REM *               *
140 REM *  SUB DEMOS    *
150 REM *               *
160 REM ***************
170 REM
180 REM    SUBFILE99
190 REM      04/85
200 REM
210 REM *HOUSEKEEPING*
220 REM
230 L$="--------------------------------"
240 CALL CLEAR
250 RESTORE 970
260 FOR L=1 TO 17
270 READ M$
280 PRINT TAB(7);M$
290 NEXT L
300 REM
310 INPUT "   PRESS ENTER TO START":A$
320 REM
330 REM *SELECT DEMO*
340 REM
350 CALL CLEAR
360 PRINT "SELECT DEMO:"
370 PRINT "------------"
380 PRINT
390 PRINT
400 INPUT "<W>RAP, <F>ILL OR <Q>UIT? ":A$
410 IF (A$<>"W")*(A$<>"F")THEN 920
420 IF A$="W" THEN 690
430 REM
440 REM *FILL DEMO*
450 REM
460 CALL CLEAR
470 PRINT "FILL DEMO"
480 PRINT "---------"
490 PRINT
500 PRINT
510 PRINT L$
520 PRINT
530 RESTORE 1100
540 FOR L=1 TO 10
550 READ M$
560 GOSUB 1290
570 PRINT M$
580 NEXT L
590 REM
600 PRINT
610 PRINT L$
620 PRINT
630 PRINT
640 INPUT "HIT <CR> KEY":A$
650 GOTO 350
660 REM
670 REM *WRAP DEMO*
680 REM
690 CALL CLEAR
700 PRINT "WRAP DEMO"
710 PRINT "---------"
720 PRINT
730 PRINT
740 PRINT L$
750 PRINT
760 RESTORE 1240
770 FOR L=1 TO 2
780 READ M$
790 GOSUB 1400
800 NEXT L
810 REM
820 PRINT
830 PRINT
840 PRINT L$
850 PRINT
860 PRINT
```

Continued on Page 13

	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	T
February 1993	1	2	3	4	5	6 TIsHUG meeting Sydney	7	8	9	10	11	12	13 TND deadline	14	15	16	17	1
March 1993	1	2	3	4	5	6 TIsHUG meeting Sydney	7	8	9	10	11	12	13 TND deadline	14	15	16	17	1
April 1993				1	2	3 TIsHUG meeting Sydney	4	5	6	7	8	9 Good Friday	10 TND deadline	11 Easter Day	12 Easter Monday	13 School holidays	14 School holidays	Sch holi
May 1993						1 TIsHUG meeting Sydney	2	3	4	5	6	7	8 TND deadline	9	10	11	12	1
June 1993			Tue 1	Wed 2	Thu 3	Fri 4	5 TIsHUG meeting Sydney	6	7	8	9	10	11	12 TND deadline	13	14 Queen's birthday	15	16	1
July 1993					1 School holidays	2 School holidays	3 TIsHUG meeting Sydney	4 School holidays	5 School holidays	6 School holidays	7 School holidays	8 School holidays	9 School holidays	10 TND deadline School holidays	11 School holidays	12	13	14	1
August 1993	Sun 1	Mon 2 Bank holiday	Tue 3	Wed 4	5	6	7 TIsHUG meeting Sydney	8	9	10	11	12	13	14 TND deadline	15	16	17	18	1
September 1993				1	2	3	4 TIsHUG meeting Sydney	5	6	7	8	9	10	11 TND deadline	12	13	14	15	1
October 1993					1 School holidays	2 TIsHUG meeting Sydney	3 School holidays	4 Labour Day	5 School holidays	6 School holidays	7 School holidays	8 School holidays	9 TND deadline School holidays	10 School holidays	11	12	13	1
November 1993	Mon 1	Tue 2	Wed 3	Thu 4	5	6 TIsHUG meeting Sydney	7	8	9	10	11	12	13 TND deadline	14	15	16	17	1
December 1993			1	2	3	4 TIsHUG Annual General meeting	5	6	7	8	9	10	11	12	13	14	15	1
January 1994						1 New Year's Day	2 School holidays	3 School holidays	4 School holidays	5 School holidays	6 School holidays	7 School holidays	8 TND deadline School holidays	9 School holidays	10 School holidays	11 School holidays	12 School holidays	1 Sch holid

anning Calendar, 1993 - 1994

ri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun
9	20	21	22	23	24	25	26	27	28

Mon	Tue	Wed
29	30	31

9	20	21	22	23	24	25	26	27	28

Thu	Fri
29	30

6	17	18	19	20	21	22	23	24	25	26	27	28
hool idays	School holidays	School holidays							Anzac Day			

Sat	Sun	Mon
29	30	31

4	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

8	19	20	21	22	23	24	25	26	27	28	29	30
								School holidays	School holidays	School holidays	School holidays	School holidays

Thu	Fri	Sat
29	30	31

6	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

0	21	22	23	24	25	26	27	28	29	30	31

Wed	Thu
29	30

7	18	19	20	21	22	23	24	25	26	27	28	29	30
								School holidays	School holidays	School holidays	School holidays	School holidays	School holidays

Fri	Sat	Sun
29	30	31

5	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

9	20	21	22	23	24	25	26	27	28	29	30

Wed	Thu	Fri
29	30	31

7	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	School holidays	School holidays	School holidays	School holidays	School holidays	School holidays	School holidays	Christ-mas Day	Boxing Day	School holidays	School holidays	School holidays	School holidays	New Year's Eve

Sat	Sun	Mon
29	30	31

4	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
hool days	School holidays	School holidays	School holidays	School holidays	School holidays	School holidays	School holidays	School holidays	School holidays	School holidays	School holidays	Australia Day	School holidays	School holidays	School holidays	School holidays	

Continued from Page 10

```
870 INPUT "HIT <CR> KEY":A$
880 GOTO 350
890 REM
900 REM *QUIT PROGRAM*
910 REM
920 CALL CLEAR
930 END
940 REM
950 REM *TITLE DATA*
960 REM
970 DATA  "***************"
980 DATA  "*               *"
990 DATA  "* FILL & WRAP *"
1000 DATA "*               *"
1010 DATA "*  SUB DEMOS  *"
1020 DATA "*               *"
1030 DATA "***************"
1040 DATA ,,,"   SUBFILE99"
1050 DATA "     04/85",,,,,
1060 REM
1070 REM
1080 REM *FILL DATA*
1090 REM
1100 DATA THIS IS AN EXAMPLE OF THE
1110 DATA FILL ROUTINE IN TI-BASIC.
1120 DATA AS YOU CAN SEE - IT IS NOT
1130 DATA THE FASTEST ROUTINE AROUND
1140 DATA BUT IT GETS THE JOB DONE!
1150 DATA IT COMES IN VERY HANDY WHEN
1160 DATA YOU WANT TO CREATE A NEAT
1170 DATA LOOKING SCREEN LAYOUT W/O
1180 DATA ALL THE HASSLE OF COUNTING
1190 DATA SPACES WHEN ENTERING DATA!
1200 REM
1210 REM
1220 REM *WRAP DATA*
1230 REM
1240 DATA THIS LINE WAS ORIGINALLY VERY LONG AND IT HAS
     BEEN SHORTENED SO THAT IT WILL APPEAR ON THE SCREEN
     WITHOUT CUTTING ANY WORDS OFF.
1250 DATA IT'S REALLY AMAZING WHAT CAN BE DONE WITH A
     LITTLE PATIENCE AND PERSERVERANCE!
1260 REM
1270 REM  *FILL/B*
1280 REM
1290 FOR XL=1 TO LEN(M$)
1300 IF LEN(M$)=28-XI THEN 1360
1310 IF SEG$(M$,XL,1)<>" " THEN 1340
1320 M$=SEG$(M$,1,XL)&" "&SEG$(M$,XL+1,LEN(M$)-XL)
1330 XL=XL+1
1340 NEXT XL
1350 GOTO 1290
1360 RETURN
1370 REM
1380 REM *WRAP/B*
1390 REM
1400 X1=0
1410 M$=M$&" "
1420 X2=POS(M$," ",X1+1)
1430 PRINT SEG$(M$,X1+1,X2-X1);:: IF X2=LEN(M$)THEN
     RETURN
1440 IF X2=LEN(M$)THEN 1470
1450 X1=X2
1460 GOTO 1420
1470 RETURN
```

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THE PHOENIX TIBBS
Interesting Tips

Want to see how accurate your TI is? Try this routine:

```
100 N=1.0000001
110 FOR C=1 TO 27
120 M=N^2
130 N=M
140 NEXT C
150 PRINT "ANSWER= ";N
160 PRINT ((674530.470741-N)/N)0;"% ERROR"
170 END
```

Tired of that cyan colour screen while programing? Try this Extended Basic routine.

```
FOR I=0 TO 9 :: CALL COLOR(I,16,1) :: NEXT I ::
CALL SCREEN(14) :: ACCEPT AT(1,1):A
```

Press ENTER. Press FCTN 4 (CLEAR).

VOILA!

The foreground colour can be changed by changing the CALL COLOR number and the number in CALL SCREEN.

Tired of using the same old CALL CLEAR command to clear the screen? Try this command instead.

```
10 CALL HCHAR(1,1,32,768)
```

It will clear the screen by sweeping from top to bottom.

Now try this:

```
10 CALL VCHAR(1,1,32,768)
```

This one clears the screen by sweeping from left to right.

Want a sharper display with your black & white TV? Add this line at the start of your program:

```
CALL SCREEN(15)
```

This will disable the colour generating circuit in the computer and remove the vertical lines often seen on B&W TV's. It also increases the sharpness of the characters.

Tired of accidentally hitting the FCTN QUIT when aiming for the SHIFT + keys. If you have 32k & Extended Basic, disable the QUIT key by entering this routine upon entering Extended Basic:

```
CALL INIT :: CALL LOAD(-31806,16)
```

If you accidently enter OLD CS1 when you mean to enter SAVE CS1, do not panic... All is not lost. Type SHIFT E and hit ENTER. You will get an I/O error but do not worry. The program will still be in memory and you will get a second chance at saving it.

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Subject Index 1992

Title	Description	Author	Page No.
Regional group reports	General interest		1.31
	General interest		2.23
	General interest		3.27
	General interest		4.27
	General interest		5.23
	General interest		6.27
	General interest		7.23
	General interest		8.23
	General interest		9.23
	General interest		10.23
	General interest		11.27
RemTalk UCSD Pascal utility	Software hints		10.21
Riemann sphere graphics, TML	Software hints	Shaw, Stephen	4.23
Right justified text	Software hints	Gaskill,Bill	8.12
Scott Foresman math series	Software review	Good,Charles	5.12
Scott Foresman reading modules	Software review	Good,Charles	9.10
Screen dump routine	Software hints	Hoddie,J.Peter	1.26
Secretary's notebook	Club news	Phillips,Terry	1.02
	Club news	Phillips,Terry	2.03
	Club news	Phillips,Terry	3.02
	Club news	Phillips,Terry	4.03
	Club news	Phillips,Terry	5.03
	Club news	Phillips,Terry	6.02
	Club news	Phillips,Terry	7.02
	Club news	Phillips,Terry	9.03
	Club news	Phillips,Terry	10.02
Sidewriter version 2.1	Software review	Tomietto,Mauro	10.17
Sorting, part 3	Software hints	Brubaker,Ron	1.19
Sorting, part 4	Software hints	Brubaker,Ron	3.24
Sorting, part 5	Software hints	Brubaker,Ron	4.20
Sorting, part 6	Software hints	Brubaker,Ron	5.15
Sprite tutorial	Software hints	McCormick,Mack	8.19
Sprites	Software hints	Freuh,Andy	10.10
STRACC routine for reformatter+	Software hints	Harrison,Bruce	6.23
Struck by lightning	General interest	Mudie,Ross	3.08
Subject index 1991	General interest		1.16
Talking about modems	Hardware hints	Brown,Robert	3.18
Talking book	General interest	Harris,Daniel	3.26
Techo time	80 track disks	Trott,Geoff	11.17
	Disk interface	Trott,Geoff	1.05
	Formatting problems	Trott,Geoff	2.06
	MiniPE system	Trott,Geoff	4.10
	MiniPE system	Trott,Geoff	8.05
	RAMdisks	Trott,Geoff	6.05
	RAMdisks, back ups	Trott,Geoff	3.07
The home computer	General interest	Peterson,Jim	9.20
TI-Base tutorial #16	Data base	Smoley,Martin	5.19
TI-Base tutorial #17	Data base	Smoley,Martin	6.21
TI-Base tutorial #18	Data base	Smoley,Martin	7.17
TI-Base tutorial #19	Data base	Smoley,Martin	8.17
TI-Base tutorial #20	Data base	Smoley,Martin	11.23
TI-Bits #13	Software hints	Swedlow,Jim	1.11
TI-Bits #14	Software hints	Swedlow,Jim	2.15
TI-Bits #15	Software hints	Swedlow,Jim	4.13
TI-Bits #16	Software hints	Swedlow,Jim	5.07
TI-Bits #17	Software hints	Swedlow,Jim	6.13
TI-Bits #18	Software hints	Swedlow,Jim	7.09
TI-Bits #19	Software hints	Swedlow,Jim	8.13
TI-Bits #20	Software hints	Swedlow,Jim	9.05
TI-Image maker	Hardware review	Pratt,Chris	5.04
TI-Writer font maker	Software hints	Stringfellow,James	3.04
TI-Writer formatter tip	Word processing	Hoyt,Harold	3.10
TI-Writer replace string	Word processing	Lesher,Jim	3.07
TI99/4A world news	General interest	Peterson,Jim	1.06
	General interest	Peterson,Jim	2.17
	General interest	Peterson,Jim	6.06
TIA instances to Assembler link	Software hints	Traver,Barry	4.22
Tigercub Printall v1.6	Software review	Peterson,Jim	7.12
Tigercub programmable calculator	Software review	Peterson,Jim	6.17
Tigercub reformatter+ v1.2	Word processing	Peterson,Jim	3.09
Time check	Software hints	West,Loren	3.15
Tips from the Tigercub #63	Software hints	Peterson,Jim	7.11
Tips from the Tigercub #64	Software hints	Peterson,Jim	8.11
Tips from the Tigercub #65	Software hints	Peterson,Jim	11.07
Tips from the Tigercub #66	Software hints	Peterson,Jim	10.11
Tips from the Tigercub #67	Software hints	Peterson,Jim	11.13
TIPS to instance conversion	Software hints	Trott,Geoff	9.07

Title	Description	Author	Page No.
TIsHUG shop report	Club news	Harrison,Percy	1.03
	Club news	Harrison,Percy	2.04
	Club news	Harrison,Percy	3.05
	Club news	Harrison,Percy	4.04
	Club news	Harrison,Percy	5.05
	Club news	Harrison,Percy	6.03
	Club news	Harrison,Percy	7.03
	Club news	Harrison,Percy	8.04
	Club news	Harrison,Percy	9.03
	Club news	Harrison,Percy	10.07
	Club news	Harrison,Percy	11.02
TIsHUG software column	Club software	Schreiber,Rolf	1.04
	Club software	Schreiber,Rolf	2.05
	Club software	Schreiber,Rolf	3.03
	Club software	Schreiber,Rolf	4.05
	Club software	Schreiber,Rolf	5.06
	Club software	Schreiber,Rolf	6.04
	Club software	Schreiber,Rolf	7.04
	Club software	Schreiber,Rolf	8.03
	Club software	Schreiber,Rolf	10.08
Title screen for TI-Base	Data base	Gaskill,Bill	8.18
To see or not to c	Software hints	Trott,Geoff	4.11
	Software hints	Trott,Geoff	5.09
	Software hints	Trott,Geoff	6.12
	Software hints	Trott,Geoff	7.15
	Software hints	Trott,Geoff	10.19
	Software hints	Trott,Geoff	11.21
Trace subroutine	Software hints	Slattery,Mike	11.11
Treasurer's report	Club news	Trott,Geoff	1.08
	Club news	Trott,Geoff	2.02
	Club news	Trott,Geoff	3.07
	Club news	Trott,Geoff	4.02
	Club news	Trott,Geoff	5.02
	Club news	Trott,Geoff	6.11
	Club news	Trott,Geoff	7.03
	Club news	Trott,Geoff	8.05
	Club news	Trott,Geoff	9.18
	Club news	Trott,Geoff	10.09
	Club news	Trott,Geoff	11.08
Use of REF in assembly	Software hints	Mudie,Ross	11.19
Vapourware, slowware or no ware	General interest	Peterson,Jim	2.14
Why I write machine code	General interest	Banfield,J.E.	4.15
Word count	Program	Swedlow,Jim	2.06
Word processing part 1	Word processing	Christensen,Col	11.05
Writing in machine code	Software hints	Banfield,J.E.	5.11
	Software hints	Banfield,J.E.	6.26
	Software hints	Banfield,J.E.	7.22
	Software hints	Banfield,J.E.	8.21
	Software hints	Banfield,J.E.	9.22
	Software hints	Banfield,J.E.	10.20
	Software hints	Banfield,J.E.	11.18
XB tips, features of ACCEPT AT	Software hints	Takach,Ben	6.15
XHi graphics program	Hardware review	Alexandersson,Jan	9.15
Younger set	Greetings, adventure	Maker,Vincent	11.16
	Programs	Maker,Vincent	1.10
	Programs	Maker,Vincent	3.22
	Programs	Maker,Vincent	5.05
	Quiz	Maker,Vincent	7.21

LEARN TO KNOW YOUR TI
LESSON 1
with Percy Harrison

Providing time permits I intend to run a series of lessons extracted from a publication by DATAMOST titled "Kids and the TI 99/4A" which will start with the very basics of the TI and work through to a reasonably high level of use. Contrary to the original title of this book, the lessons will be beneficial to both young and old alike who do not have a very good knowledge of the TI or Programming on the TI.

LESSON 1 NEW, PRINT, REM, and RUN

GETTING STARTED

Turn on your computer. You will see:

READY--PRESS ANY KEY TO BEGIN

Press a key. You will see a menu that says:

PRESS

1 FOR TI BASIC

Press key "1." You will see:

TI BASIC READY

>

and a flashing square on a blue screen. This square is called the "cursor." When you see it on the screen, the computer wants you to type something.

"Cursor" means "runner." The square runs along the screen showing where the next letter or character you type will appear.

TYPING

Type something on your keyboard. What you type shows on the TV screen.

COMMAND THE COMPUTER

Try this. Type: GIVE ME CANDY

and press the ENTER key. The computer says:

* INCORRECT STATEMENT

and sounds a tone from the TV.
(Be sure that you have the TV sound turned up.)

The computer understands only about 80 words. The words are called "key words." You will need to know which words the computer understands.

Here are the first commands to learn:

NEW PRINT REM RUN

THE NEW COMMAND

Type: NEW and press ENTER.

NEW empties the computer's memory so you can put your program in it. It also erases the TV screen.

HOW TO ENTER A LINE

When we say "enter" we will always mean to do two things:

1) Type a line
2) then press the ENTER key.

Enter this line: 10 PRINT "HI"

The " marks are quotation marks.

To make quotation marks:

hold down the FCTN key and

press the key that has the P and " on it.

(Did you remember to press the ENTER key at the end of the line?)

Now line number 10 is in the computer's memory.

It will stay in memory until:

you enter the NEW command

or you turn off the computer

or you press FCTN QUIT (more in a later lesson)

Line 10 is a very short program.

THE NUMBER ZERO AND THE LETTER "O"

It is easy to get zero and the letter "O" mixed up.

The computer always writes on the screen like this:

the zero like this: zero Ø

and the letter O like this: letter O O

These lessons write zero like this: zero Ø

Be careful to type zero, not "O," for numbers:

right 10 PRINT "HI"

wrong 10 PRINT "HI"

WHAT IS A PROGRAM?

A program is a list of commands you wish the computer to do.

The commands are written in lines.

Each line starts with a number.

The program you entered above has only one line.

HOW TO RUN A PROGRAM

A moment ago you put this program in memory:

10 PRINT "HI"

Now enter: RUN

(Did you remember to press the ENTER key?)

The RUN command tells the computer to look into its memory for a program and then to obey the commands it reads in the lines.

Did the computer obey the PRINT command? The PRINT command tells the computer to print whatever is between the quotation marks onto the TV screen.

The computer printed: HI

EXTRA STUFF WHILE THE COMPUTER RUNS

The screen turns green while the program is running.

After the program is done, the computer prints

** DONE **

and then the screen turns blue again.

A LONGER PROGRAM

Clear the memory with NEW

(Did you remember to press ENTER afterwards?)

Enter this program:
```
1 REM PROGRAM 2
2 PRINT "HI"
3 PRINT "FRIEND"
```

This program has 3 lines. Each line starts with a command e.g. REM PROGRAM 2

Enter RUN

What the program does:

Line 1 The computer skips this line because it is a REM.
Line 2 The computer prints HI
Line 3 The computer prints FRIEND

The REM command lets you put little notes to yourself in the program. REM means "remark" or "reminder."

In line 1 we use REM to give a name to the program. The name is "PROGRAM 2."

The computer does the commands in the lines. It starts with the lowest line number and goes down the list in order.

HOW TO NUMBER THE LINES IN A PROGRAM

Usually you will skip numbers when writing the program.

Like this:
```
10 REM PROGRAM 2
20 PRINT "HI"
30 PRINT "FRIEND"
```

It is the same program but has different numbers.

The numbers are in order, but some numbers are skipped.

You skip numbers so that you can put new lines in between the old lines later if the program needs fixing.

Assignment 1:

1. Use the command NEW. Explain what it does.
2. Write a program that uses REM once and PRINT twice. Then use the command RUN to make the program obey the commands.
3. What is the difference between "entering" a line and "typing" something?
4. Write a program that will print your full name.
5. Run it.
6. Erase the program from memory and the screen.
7. Try to RUN it. What does the computer say? Why?
8. Why do you usually skip numbers when writing a program?

Have fun, more next month.

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GETTING STARTED No.2
by Ross Mudie

This series is intended for people who want to begin to understand their TI99/4A home computer. By gaining an understanding of programming in TI Extended BASIC, it is possible to learn how to write your own programs to do the special things that you want to do with your computer.

As I indicated last chapter, my first serious program was a maths program for my kids. A good way to learn anything is to get in and have a go. Set yourself a goal, even if you do not know how to get to the end at first, and then work on it. I did that with BASIC, Extended BASIC and then assembly. The chapters in this series is intended for learning by typing the program lines into the computer as you read them. Enough talk, lets get on with some Extended BASIC programming.

RND is a function which returns a RANDOM NUMBER with a range of values from zero to less than one. The Random Number generator will generate the same sequence of numbers each time it is used unless the statement RANDOMIZE is used in the program.

```
100 ! SAVE DSK1.RNDTEST
120 FOR A=1 TO 14
130 PRINT RND,
140 NEXT A
```

The program will print 14 random numbers and then end. RUN the program again, the lack of a CALL CLEAR will leave the results from the previous time on the screen. Compare the two lists and you will find that they are the same. Add the following line:

```
110 RANDOMIZE
```

RUN the program again, twice. Are the two lists of numbers the same or are they different?

So far the range of random number values has been less than one, which may not be very useful. Random numbers can be easily converted to any value range required. Edit line 130 as-follows:

```
130 PRINT INT(RND*16)+5,
```

This will give random numbers in the range of 5 to 20. In line 130, the random number from the RND function is first multiplied by 16, the whole number (integer) is then taken and a fixed value of 5 is added. The INT function returns the INTEGER or WHOLE NUMBER part of the numeric expression.

Considering that RND gives values from zero to always less than one, if a value obtained from RND is multiplied by any number and the RND value happens to be zero, then the result must be zero. If 5 is added to the resultant zero, then the minimum value of five is achieved. Let us find what value to multiply the RND value by to obtain the maximum value originally specified of 20.

IF	RND is always less than 1
THEN IF	RND is multiplied by a value
AND	the INT function is used to take the whole number part
THEN	the maximum possible value must be one less than the multiplying value.

After all that, the maximum result required is 20, thus 20, minus the minimum value, plus one to make up for the effect of INT, will give the value range required. Try RUNning the program a few times to see if the required value range is actually achieved.

```
MULTIPLIER = MAXIMUM REQUIRED-MINIMUM REQUIRED+1
           = 20-5+1
           = 16
```

Work out what values would be needed to give a random number value range of between, say, 25 and 57. Try it out, you may need a few more values printed so change the TO value in line 120 to 100 and change the "pending print" character in line 130 from a comma to a semi-colon. This will print more results on the screen.

Careful examination of the results should reveal at least one "25" (the minimum value) and at least one "57", (the maximum value).

CALL SOUND allows you to instruct the computer to produce a tonal sound. It is one of the INBUILT sub programs. CALL CLEAR was used in the first chapter to clear the screen. CALL CLEAR needs no other specifications, but CALL SOUND needs more information. It needs specification of the length of time for the sound, the pitch or frequency and the volume or loudness of the tone sound.

The parameters for sound inside the brackets are DURATION, FREQUENCY, VOLUME. CALL SOUND can also make up to 3 simultaneous tone sounds and a noise. The following little program uses tone generator 1 to make ascending tones of increasing duration.

```
100 ! SAVE DSK1.SOUNDTEST
110 CALL SOUND(200,110,2)
120 CALL SOUND(400,1000,2)
130 CALL SOUND(600,2000,2)
140 CALL SOUND(800,3000,2)
150 CALL SOUND(1000,5000,2)
```

By making multiple access to sound, many interesting sounds can be produced. The little BELL program which follows is a simple example. Using a FOR TO NEXT loop, with STEP, the CALL SOUND program can be made to produce a bell like sound. The V loop varies the VOLUME from the loudest which is a value of zero to a mid volume level of 16. The successive volume levels are 0 then 2 then 4, etc until the last value of 16. This means that CALL SOUND is accessed 9 times. The V loop is "nested" inside the COUNT loop which controls the number of times that the bell sound is produced. Type this little program in to your computer and try it out.

```
100 ! SAVE DSK1.BELL
110 FOR COUNT=1 TO 3
120 FOR V=0 TO 16 STEP 2
130 CALL SOUND(-50,900,V)
140 NEXT V
150 NEXT COUNT
```

The duration value is specified as -50. The negative value of duration allows SOUND to update as soon as the program comes around to the CALL SOUND again. Try changing the duration to a positive value and try the frequency. A low frequency such as 200 will produce a DONG sound, try it.

When information is required from the keyboard the INPUT statement can be used. INPUT is capable of having a "prompt string" which is printed on the screen, followed by a flashing cursor. After the prompt string, a colon separator is required, followed by the variable which INPUT will use to return the result of the keyboard input.

Lets put RND, INT, PRINT, IF THEN, CALL SOUND and our new statement INPUT to work. Type the following program into your computer and try it out.

```
100 ! SAVE DSK1.MATHTEST
110 RANDOMIZE
120 A=INT(RND*7)+4
130 B=INT(RND*7)+4
140 PRINT "What is";A;"+";B;"?"
150 INPUT "Answer?":ANSWER
160 IF ANSWER=A+B THEN 200
170 CALL SOUND(100,200,2)
180 PRINT "Incorrect, please try again"
190 GOTO 140
200 CALL SOUND(100,900,2)
210 PRINT "Correct"
220 GOTO 110
```

Lines 120 and 130 give two random numbers in the variables A and B. Line 140 poses the question by printing the text component which is enclosed in quotes together with the values in the variables. The semi-colon instructs PRINT to print the next part immediately following. The reason for the spaces either side of the values from variables A and B when they are printed on the screen is that they are numeric variables. If a numeric variable is printed, the sign preceeds the value and a space follows. If the sign is positive, the sign is replaced by a space.

Line 150 prompts for the answer and after the answer is typed on the keyboard, followed by the ENTER key, it places the response in the variable ANSWER. Line 160 quite self explanatory, if the answer is correct then the program goes to line 200 where the "correct" sequence occurs and the program presents a new sum. If the answer is wrong, then the program goes from line 160 to 170 giving the "Incorrect" sequence. The same sum is presented again.

When the program is run, you will notice that the lines are one after the other on the screen. If a colon is used before and/or after a print string will cause the PRINT statement to scroll up one line. In extended BASIC, it is necessary to place a space between successive colons to instruct PRINT to scroll more than once. Two colons together :: act as a statement separator which allows more than one statement to be used in the same program line.

Edit line 140 to include a colon before the first quotation symbol. RUN the program now and observe that the sums set are separated by a blank line.

Try changing the semi-colons to colons in line 140. RUN the program and observe how the colon print separator causes PRINT to place the information which follows on the start of the next screen line. Try also 2 or 3 colons, which are separated by a space. Change the colon print separators back to semi-colons, leaving the colon after the PRINT command.

Lets jazz up the sounds by changing lines 170 and 200 as follows:

```
170 FOR V=0 TO 16 STEP 2 :: CALL SOUND(-50,200,V)::
NEXT V

200 FOR V=0 TO 16 STEP 2 :: CALL SOUND(-50,900,V)::
NEXT V
```

This is our first use of a "multi-statement" line. Remember that the multi-statement symbol is 2 colons without space, where multiple colons with spaces in between the colons cause PRINT to print on the next line.

The BELL sound is an ideal application to create our first user defined SUB PROGRAM. Type in the following lines 300 and 320.

```
300 SUB BELL(F)

320 SUBEND
```

Create line 310 by going into edit mode on line 170 (170, FCTN X (down), then press ENTER. Next press FCTN 8 (redo) and the cursor will be on the start of the line number. Change the line number 170 to 310 and change the frequency value of 200 to the variable name F .

```
310 FOR V=0 TO 16 STEP 2 :: CALL SOUND(-50,F,V)::
NEXT V
```

Next edit lines 170 and 200 as follows:

```
170 CALL BELL(200)
200 CALL BELL(900)
```

RUN the program again to test it out. When the main program executes either line 170 or 200, it will transfer to the BELL sub program. The value of the numeric constant (the 200 or 900) will pass to the variable F in the sub program. On completion of the sub program, the statement SUBEND (one word) will pass execution back to the next statement after the call in the main part of the program.

A major advantage of the user defined sub programs is that they can be self documenting if the CALL name has some meaning. Whilst of no advantage in this case, variable names used in the main program may be used again in a sub program without the values being transferred between the sub program and the main program. When values must be transferred into or out of a sub program, include the required variables in both the CALL and the sub program name. The argument list (list of parameters) in the CALL must match the argument list in the sub program name with respect to type and number of arguments.

Add the following multi-statement lines to the program.

```
105 CALL CLEAR :: CALL SCREEN(6):: CALL COLOR(0,16,1,1,
16,1)

106 FOR S=2 TO 12 :: CALL COLOR(S,16,1):: NEXT S
```

Multi-statement lines save 5 bytes of memory space per additional statement over using separate lines for each statement and execution speed of the program is slightly improved.

The colours available in the TI99/4A for screen and characters are numbered as follows:

1 Transparent	5 Dark Blue	9 Medium Red	13 Dark Green
2 Black	6 Light Blue	10 Light Red	14 Magenta
3 Medium Green	7 Dark Red	11 Dark Yellow	15 Gray
4 Light Green	8 Cyan	12 Light Yellow	16 White

TI BASIC and TI EXTENDED BASIC COLOUR TABLE

CALL SCREEN(COLOUR NUMBER) sets the background colour of the whole screen. Use the colour number from the colour table.

The numbers and letters are each assigned an ASCII value. The ASCII values are grouped into character sets, each of which contains 8 characters, (except Extended BASIC set zero). The character sets, ASCII codes and characters are included in a table at the end of this article.

In line 105, the CALL COLOR changes character sets 0 and 1 to White (16) character foreground with a transparent (1) character background. CALL COLOR permits the use of multiple groups of arguments to define more than one colour set in a single call of the sub program. In each group of 3 arguments the values define, in order, the character set number, the character foreground colour and the character background colour. In line 106 the CALL COLOUR inside the loop changes sets 2 to 12 to white on transparent by using the numeric variable S inside the FOR-NEXT loop.

When you run the program with the green background colour on character sets 2 to 12, and the transparent background on sets 0 and 1, you will observe an effect from when the program starts. The width of the green backgound will become 4 characters narrower in each line which has printing in it. This is caused by the fact that CALL CLEAR wrote spaces over the whole of the active area of the screen, which is 32 characters wide and when the program used PRINT, it uses an area of the screen 28 characters wide. In the two characters at either end of each PRINT line, PRINT has placed EDGE CHARACTERS which are ASCII 31, in character set 0. Redefine the background of set 0 to prove the point.

Do you really believe that the edge character is really either end of a print line? After all it prints on the screen as a blank character, just like a space. Want to prove the point?

```
145 CALL GCHAR(24,1,G):: DISPLAY AT(23,26):G
```

Add line 145 to Get a CHARacter off a particular position on the screen. The inbuilt sub program CALL GCHAR will take a copy of the ASCII value of a screen character at the Row and Column (32 column screen) and place it in the variable G. By printing the value in the variable G on the screen with DISPLAY AT, the screen is not disturbed by the diagnostic printing. Change the values for row and column to somewhere where a space would be expected on the screen. A SPACE is ASCII 32, prove the point for yourself by trying it.

Try changing the CALL COLOR to a Light red character background in line 106, ie, CALL COLOR(S,16,10) . Then RUN the program. The difference between screen background colour and character background colour will now be obvious if you are using a colour monitor or colour TV. Note that character sets 0 and 1 are left defined as a white character foreground and transparent background for the following example.

If we redefine character set 1 (line 105) a very different result will be obtained since the screen is space characters where there is seemingly "nothing" and the space character (ASCII 32) is in character set 1. Try redefining character set 1 with a red background colour (1,16,10) and after trying it, a green colour background (1,16,3). Observe the effect by RUNning the program in each case.

Character definition will be discussed in a future article.

In the next chapter I will look at counting the number of attempts allowed for each sum, the total number of sums set and scoring the percentage of success.

The table which follows shows the relation of character set numbers, ASCII codes and the printable characters.

CHAR SET	ASCII CODE	CHARACTER	CHAR SET	ASCII CODE	CHARACTER
0	30	cursor			
0	31	edge char			
1	32	space	7	80	P
1	33	! exclamation	7	81	Q
1	34	" quote	7	82	R
1	35	# number sign	7	83	S
1	36	$ dollar	7	84	T
1	37	% percent	7	85	U
1	38	& ampersand	7	86	V
1	39	' apostrophe	7	87	W
2	40	(open parenth	8	88	X
2	41	) close paren	8	89	Y
2	42	* asterisk	8	90	Z
2	43	+ plus	8	91	[open bracket
2	44	, comma	8	92	\ back slant
2	45	- minus	8	93	] close bracket
2	46	. period	8	94	^ exponentiation
2	47	/ slant	8	95	_ under line
3	48	0	9	96	` grave
3	49	1	9	97	a
3	50	2	9	98	b
3	51	3	9	99	c
3	52	4	9	100	d
3	53	5	9	101	e
3	54	6	9	102	f
3	55	7	9	103	g
4	56	8	10	104	h
4	57	9	10	105	i
4	58	: colon	10	106	j
4	59	; semicolon	10	107	k
4	60	< less than	10	108	l
4	61	= equals	10	109	m

4	62	> greater than	10	110	n
4	63	? question	10	111	o
5	64	@ at sign	11	112	p
5	65	A	11	113	q
5	66	B	11	114	r
5	67	C	11	115	s
5	68	D	11	116	t
5	69	E	11	117	u
5	70	F	11	118	v
5	71	G	11	119	w
6	72	H	12	120	x
6	73	I	12	121	y
6	74	J	12	122	z
6	75	K	12	123	{ left brace
6	76	L	12	124	| vert line
6	77	M	12	125	} right brace
6	78	N	12	126	~ tilde
6	79	O	12	127	DEL

Characters 128 to 143 in extended BASIC and 128 to 159 in TI BASIC are not defined in the computer.

SET	ASCII CODES	
13	128 to 135	
14	136 to 143	
15	144 to 151	Character sets 15 and 16 only
16	152 to 159	apply to TI BASIC.

Character set 0 is not accessable from TI BASIC.

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TISHUG TI FAIRE
by Ian Mullins

Congratulations to all members who contributed towards making the TI FAIRE a resounding success. It was a tribute to all concerned and demonstrated how much can be achieved when we all work together for a common goal. A great team effort! No two stands were identical- each being unique in its own right. It would be hard to conceive that a rival computer show would be able to emulate the unique displays that were assembled at our faire.

It would be unfair to select any particular stand for special mention as each had its own character that contributed toward the overall effect. Thanks to all concerned for their time and effort.

The most important and rewarding aspect was the TI users that we had visiting us from interstate as Perth, Melbourne and Brisbane were well represented by TI enthusiasts. A feeling of comeradie was experienced that is a particular characteristic of the TI fraternity. I am sure lasting friendships were formed that should benefit us all in the future.

Let us look forward with renewed interest to the TI future in 1993!

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WHAT TIing MEANS TO ME
by Pat Taylor

The following extraction is from the 10th INTERNATIONAL FAIRE (CHICAGO USERS GROUP) 31/10/92.

"To me, TIers are so needed as a group to show the world that little people still can survive by putting their common efforts together. To me, TI groups symbolize much more than a computer. It is a group of people who opted to work together, despite differences, rather than buckle under society's hue and cry that more expensive and bigger is always better. To me, TIers have proved that a common goal can be met when the persons involved are willing to give the witness that the latest technology and most expensive is not the goal of everyone. I think we need the witness that people make a bigger difference in our lives than things, and I think the TI community does just that. It brings together people and things in a balance not commonly seen today."

o

TUTORIAL WEEKEND for EXTENDED BASIC
by Ross Mudie,

It is proposed that a tutorial weekend be held for members who are having problems getting started with TI Extended BASIC. The proposed dates are Saturday 27th and Sunday 28th March 1993. The proposed tutorial allows all participants to bring their own computers and to receive guidance with problem areas of Extended BASIC in an intensive learning environment. The club will arrange computers for members who travel to the tutorial from a distance, (by plane or train etc), for whom it is not practical to bring their own computer.

The start of the tutorial will be 10am on the Saturday morning with setting up of computers. The tutorial will start in ernest at 11am and go through to about 9pm on Saturday evening. Lunch will be held about 12.30 and an evening meal about 6pm. The Sunday session will start at 9am and finish at about 3pm. Lunch will be provided on Sunday, with tea or coffee available as they are needed. Some of the participants will probably sleep on site to maintain security for equipment left set up over night.

The cost of the tutorial will just be the cost of providing the catering, your own fares to and from the tutorial weekend, the cost of hiring the school rooms and your own accomodation if staying in a motel.

We need to know how many people want to attend in sufficient time to properly arrange the weekend. When one of these weekends was held about 2 years ago for Assembly Language, everyone had a great time and it was an effective learning experience. If anyone who travels from a distance wants to stay in motel accomodation (at their own cost) or is billeted in another members home, the club will arrange transport to and from the tutorial venue, providing that the distance is reasonable.

We will need to know what areas of Extended BASIC each participant needs help, to allow the Tutorial to be structured for maximum benefit.

If you are interested in attending, please contact Dick Warburton at (02) 918 8132 or Ross Mudie (02) 456 2122, on or before 6th March 1993. The decision to proceed with the tutorial weekend will be made at the meeting on 6th March 1993.

This weekend is for beginners and people who are having problems learning to use Extended BASIC. There is NO minimum standard, just a desire to learn and being prepared to make the effort.

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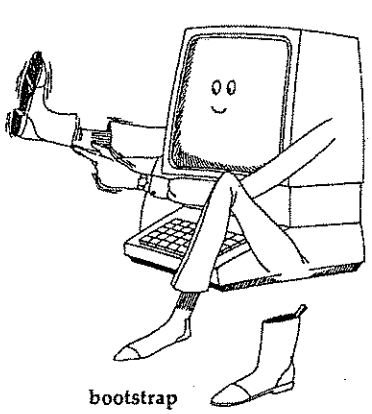
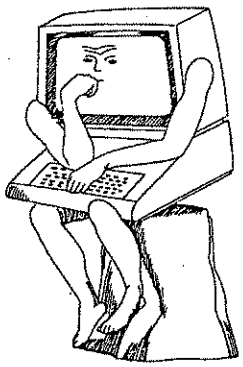


bootstrap



artificial intelligence

GAMES INFORMATION
Series III

Yes, I do not believe it either... the MASTER of Games and Adventures is BACK... that is me, if you were not sure!! As one famous TI-99er once said, '...this is the article we had to have!!!'

Let me explain. On page 9 of the Nov 1992 TND, Ross says that he is only person who is contributing anything to the BBS. I would have to agree, as I have not called for over 6 months. (Sorry Guys!!) Also I have noticed a trend in the TND lately, where most of the articles are coming from Overseas sources and not from our own group. Yes it is True!!! The TND used to be well known for original articles... not any more. This might sound harsh, but if we do not get out of our easy chairs, TIsHUG and the TND will slowly turn from real life (I honestly prefer ACA) to history. People have been asking for contributions for sometime now, and it appears that only the same people write articles. This is YOUR club, please help IT!!!

Anyway let's get on with this article...

Firstly, I will give a quick review of articles in the second series.

1. Article Summary from Series I
   4a Flyer
2. Jungle Hunt
   Apliner
   Spad XIII
   Cheat Modes
3. Zork I
   Witness
4. Zork II

This month, I will give you the solution to another Infocom Adventure... Suspect!

"Suspect" is a little different from the previous two Infocom mysteries. In both "Deadline" and "Witness", you were the police, gathering evidence, questioning suspects, and making the arrest. This time around, however, you are on the other side of the fence: YOU are the suspect, and the police are gathering evidence against you, for a crime you did not commit. The game is thus a race against time, as you desperately attempt to collect the real evidence before you are arrested.

The adventure is centered on a critical point; until you realize that point, you really do not know what you are looking for, and much evidence can be overlooked or spoiled. The critical point is the fact that Veronica is murdered before the game begins. That elaborate fairy costume, with its over-the-head mask, allows someone else to impersonate her, and thus provide an alibi for the real murderer.

Also, you will notice that this is by far the busiest Infocom ever; people move around a lot in the game, and you are almost always running into, or seeing, someone or other. Most of the time, you do not have to worry about that (I think they just put that that in there to confuse you a little, and make you waste time following harmless people around).

It is also necessary to collect ever last bit of evidence. Overlook one thing, and you will never be able to get a conviction, no matter how sure you are of who is guilty. So, with all that in mind, let's get started.

So there you are in the plush Ashcroft manor on Halloween night, enjoying a costume ball being hosted by Veronica Ashcroft, and wondering what sort of story you can work up for your newspaper. As the game begins, you are invited to join Michael, dressed as a sheik, and a small group of people.

You might as well go over there, and marvel at the performance given by the woman in the fairy costume, supposedly, but not really, Veronica. Having made sure she creates a fuss by spilling a drink on herself, she promptly leaves. Do not bother following her, you have better things to do. Go East to the bar, then North to the French Doors.

Unlock the doors, then open them and go East. Wow, it sure is pouring out there, isn't it? This is one of the crucial points of evidence in the game; you must note the rainfall now, and again in a little while. In the meantime, you can drop your costume receipt, pen, and notebook here; they are merely excess baggage, and you will not need them for anything.

Ok, now it is time to head for the front door, to let in a late arrival who is on her way. Go West to re-enter the Ballroom, South to the Bar, then straight West until you reach the Long Hall South. Go South from there to where the Long Hall Begins, and West again until you come to the Front Hall.

Now it is South to the Entry Hall. Anytime now, the front doorbell will ring. When that happens, unlock the front door and open it. Alicia will come in. After she does that, step outside South, and observe the rain. Hmmmmm, looks like it is let up a little, only a drizzle is falling now.

Having gained your first piece of evidence, you now go get some more, by heading to the office, where Veronica sits, strangled with your cowboy lariat. Go North to the Front Hall, West to the Hallway Intersection, South to the Corner, West, and then North.

And here you are in a very messy office. Whoever did this sure did a good job! But there is no time to worry about the papers and other items strewn about. First, get the manila folder from the desk and the fairy mask from the floor. Look in the waste basket and get the business card. Finally, unpleasant though it may be, search the body.

Aha! A silver bullet. In fact, it is a bullet from your gunbelt, thoughtfully placed on the scene as additional evidence against you. Take the bullet and put it back in your belt. Under no circumstances remove the rope; if you do that, you will never get a conviction against the real killer.

Since there is some time yet before the murder is discovered and the police arrive, you can go pick up another vital piece of evidence, in the kitchen. Make your way back to Long Hall South, then straight North to the Dining Room and from there East into the Kitchen.

Here is a trashbasket with the remains of the broken glass that "Veronica" dropped. Careful now; do not get the glass (or you will spoil the fingerprints on it!), get the whole basket (you may feel a bit odd running around with the trashbasket, but it is necessary!). Now it is time to play hide and seek.

So, trashbasket in hand, you now make your way to the garage. Go North at the Hallway Intersection (you should know how to get there by now!), until you come to the door to the walkway. The door is locked, but fortunately, being on the inside, you can unlock it, and open the door. Go North onto the walkway, then West to the garage.

The first thing you notice is a tool chest. Open that, and get the crowbar. Now you can take a moment to admire the BMW and the Mercedes, but do not take too long. Someone will be coming soon. So, hide behind the Mercedes and wait. In fact, you can wait for Michael.

The reason you are waiting is that, while you have been busily collecting evidence, a carefully-faked argument has taken place in the Ballroom. This will lead to the discovery of the body by Michael, Colonel Marston, and Cochrane. And as soon as Michael leaves the office, he will head straight for the garage (if you have played this part before, you may have been suspicious of his doing something so odd, but following him will not help you to find out what he is up to).

And yes, here he comes. From your vantage point, you can see him open the trunk of the BMW, although what he is doing there is not clear...yet! Keep waiting until he leaves (by that time, the police will have arrived), then open the BMW trunk with the crowbar. Well, look at that, there is a Trust Folder in the trunk!

Drop the crowbar and get the folder. The next part is crucial, and you have very little time to spare. You must get back to the Fireplace in the Ballroom as soon as you can. You have to be there when Marston arrives, or you will lose an important piece of evidence.

While you have been breaking into the car trunk, Michael and Marston have been meeting briefly in the library, where Michael hands over a piece of paper to Marston. You could hide in the library, and watch the transaction (instead of first going to the garage and hiding there), but still you have to go the garage later anyway. Either way, you must get to the Fireplace quickly.

So high-tail it directly back to the Ballroom. Do not take any time to do sight-seeing. Once at the Fireplace, just wait. You will not have to wait very long. Marston will come in, and try to burn something in the Fireplace. Grab the paper before it is reduced to ashes. Whew! That was a close one.

At this point, you have two ways to go. You can try spooking the guilty parties, or you can just go about giving your evidence to the detective, and let it go at that. If you want to try shaking up Michael and Alicia (you probably guessed that by now), you need to show your evidence to them. Show everything that concerns Michael to Michael, and everything that concerns Alicia to Alicia (do not forget the analysis reports later on). This is tricky, since you must also give the detective some of your evidence, before he decides to arrest you, so watch your timing if you want to go about doing this (I will not tell you what happens; try it and see for yourself).

Speaking of the detective, it is time to go find him and begin presenting some of the items you have been collecting. He is usually in the vicinity of the office, checking out the various rooms, after which he heads to the Ballroom and stays there. You do not want to wait for that, since he will probably arrest you for the crime. It is better to go after him, and give him a few other things to think about.

Once you have located the detective, and he stays in one place long enough, you can begin to hand over some of your little treasures. First, have him get the glass analyzed for fingerprints (and now, at last, you can drop the trashbasket!).

While Duffy is on his way to the lab, give the detective the two folders and the paper. Hey, that sure got him interested, did it not? However, hang on to the mask and the card, because it is not yet time for those (by the way, have you looked inside the mask yet? You will need to get that hair analyzed too, and Duffy is not there to do that).

You still need some more evidence to wrap up the case, so head back once more to the Ballroom. Along the way, stop off in the East Coat Closet, and pick up the wet overcoat. A quick glance at the label tells you that it belongs to Alicia. Hmmmm, suspicious that it is so soaked, and it was only drizzling when she arrived!

When you get to the Ballroom, locate Cochrane (dressed as an astronaut). You will most likely find him at the Bar. Show him the card, and he will give you some important (verbal) evidence. Now go back to the Fireplace, and hang out until the detective arrives.

When he does get there, show him the coat. He does not seem too impressed, so tell him about the rain (NOTE: There is a variance among the different computer versions. Save the game first, and then try: TELL DETECTIVE ABOUT RAIN. If that does not work, restore and try: TELL DETECTIVE ABOUT WEATHER. One or the other of these should do the trick).

Somewhere along the line, the detective will get the fingerprint analysis and show it to you (actually, he gives it to you). You are not surprised to find that it is not Veronica's prints on the glass. Now, have the dark hair analyzed (did you ever look at Veronica's hair? She is (or was) a blonde).

While you wait for the hair analysis, give the business card to the detective (you do not have to tell him about Cochrane). Then just wait again until the hair analysis comes back. All right, this is the big moment! Tell the detective to arrest Michael and Alicia.

TA-DA! Your evidence makes an air-tight case, and both Michael and Alicia will be in prison for a long, long time! For a journalist, you are a pretty good detective (of course, there was a small incentive involved!).

Well that the end of yet another GAMES INFORMATION article (Series III). Stay tuned for yet more informative reviews and solutions to your favourite games and adventures. As usual, if you have any questions, I can be contacted in the following ways...

1. By the BBS, Username: Games
   Password: Was it ...?? (Next month)

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

2. By Phone...
   (02) 743-3019 Home
   (02) 516-2399 Work (Until about 7pm)

3. By Post...

   46 Llewellyn Street
   Rhodes 2138
   New South Wales
   A u s t r a l i a

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

Just a Short Note:

(From the Author) "This article was written because of lack of AUSTRALIAN & SYDNEY articles in the TND. If you think you agree with this statement, why not do something about it!!! How about NOW!!!"

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

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Regional Group Reports

Meeting Summary For FEBRUARY

Banana Coast	14/02/93 Sawtell
Central Coast	13/02/93 Saratoga
Glebe	11/02/93 Glebe
Hunter Valley	13/02/93
Illawarra	15/02/93 Keiraville
Liverpool	12/02/93
Northern Suburbs	25/02/93
Sutherland	19/02/93 Jannali

BANANA COAST Regional Group
(Coffs Harbour Environs)

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

CENTRAL COAST Regional Group

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

GLEBE Regional Group

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

HUNTER VALLEY Regional Group

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

ILLAWARRA Regional Group

Regular meetings are normally held on the second Monday of each month after the TIsHUG Sydney meeting, except January, at 7.30pm, at the home of Geoff & Heather Trott, 20 Robsons Road, Keiraville. A variety of activities accompany our meetings, including Word Processing, Spreadsheets and hardware repairs. 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. Contact Larry Saunders (02) 6447377 (home) or (02) 7598441 (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. Peter Young

TIsHUG in Sydney

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

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FEBRUARY MEETING - 6th FEBRUARY

For the first meeting of the year we hope to have some software ready that we had hoped to have for the December meeting. Perhaps there will be a demonstration of such. There is also the possibility of having a discussion of the latest proposal regarding introducing IBM clones into our group. Please read any articles about this in this issue before coming to the meeting in order to be well informed.

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

March	7th February
April	7th March

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

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* TI EXTENDED BASIC (TEXAS INSTRUMENT)
* LEARNING TO USE THE TI99/4A COMPUTER (KEVIN TOWNSEND)

HARDWARE

* TI/99A BASIC SYSTEM (console unused- books unopened)
* TI/99/4A CONSOLE (silver)

SOFTWARE

* SUPER PROGRAMMER (EXTENDED BASIC MODULE/ TUTOR CASSETTE/BOOK), still in cellophane, tapes complete with books.
* BEGINNERS BASIC TUTOR
* OLDIES BUT GOODIES GAMES 11
* MYSTERY MELODY
* GHOST TOWN
* DRAW POKER
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