



NEWS DIGEST

S&C (C) 1988
TISHUG

Focusing on the TI-99/4A Home Computer

Volume 7, Number 3

April 1988

Registered by Australia Post - Publication No. NBH5933

TI - Faire TI-99/4A Expo

TI - Faire

TI-99/4A Expo

TI - faire
TI - Faire

TI-99/4A Expo
TI-99/4A Expo

At the Brisbane College of Advanced Education, Carseldine
on May 21st, 1988

Myarc will be demonstrating:
The Geneve 9640 Computer
Floppy disk controllers
Hard/floppy disk controller
512K bytes memory Expansion

Rave 99 will be demonstrating:
Keyboard enhancement
Keyboard interface card
Speech synthesizer adapter card
2M byte memory enhancement system

For further information contact:

Mr. Garry J. Christensen
36 Henzell Street
Kippa-Ring
Queensland, 4020
(07) 284 1841

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

\$2



TISHUG NEWS DIGEST

TIshUG News Digest ISSN 0819-1984

TIshUG (Australia) Ltd

TIshUG News Digest

March 1988

All correspondence to:

PO Box 214
REDFERN NSW 2016
AUSTRALIA

DIRECTORS:

Co-ordinator:

Chris Buttner .Tel.(02) 871 7753

Secretary:

Terry Phillips Tel.(02) 797 6313

Treasurer:

Percy Harrison Tel.(02) 808 3181

Cyril Bohlsen .Tel.(02) 639 5847

Russell Welham Tel.(043) 92 4000

SUB-COMMITTEES:

Publication:

Geoff Trott ...Tel.(042) 29 6629

BBS sysop:

Ross MudieTel.(02) 456 2122

Merchandising:

Bob Bunbury ...Tel.(02) 601 8521

Printed Library:

Warren Welham .Tel.(043) 92 4000

Software Library:

Terry Phillips Tel.(02) 797 6313

REGIONAL GROUP CONTACTS:

CARLINGFORD

Chris Buttner .Tel.(02) 871 7753

CENTRAL COAST

Russell Welham Tel.(043) 92 4000

COPFS HARBOUR

Keir WellsTel.(066) 55 1487

GLEBE

Mike Slattery .Tel.(02) 692 0559

ILLAWARRA

Bob Montgomery Tel.(042) 28 6463

LIVERPOOL

Larry Saunders.Tel.(02) 644 7377

NORTHERN SUBURBS

Dennis Norman .Tel.(02) 452 3920

SUTHERLAND

Gary Wilson ...Tel.(02) 543 1314

MEMBERSHIP AND SUBSCRIPTIONS:

Joining Fee\$ 8.00

Annual Family Dues\$25.00

Dues Overseas Airmail ..US\$30.00

or .UK£22.00

or AUS\$50.00

Publications Library\$ 5.00

Texpac BBS\$ 5.00

BBS Membership:

Other TI User Group

Members ..\$10.00

Public Access\$25.00

Title	Description	Author	Page #
10X/zero program	Word processing	Dave Heatherington	22
132 characters in print line	Word processing	Paul Meadows	21
256 ASCII codes with TI-Writer	Word processing	David Aragon	23
40 column display in TI-Writer	Word processing	George Brandt	22
Automatic form feed for PF	Word processing	Jim Petersen	21
Communicators	BBS information	Ross Mudie	5
Controlling your printer	Word processing		28
Define printing character sets	Word processing	Steven Shouse	24
Documentation clean ups	Word processing	Tom Rhodes	22
Don't hesitate to transliterate	Word processing	Abdallah Clark	27
File processing	Software hints		8
File too large?	Word processing		20
Forcing printer pauses	Word processing	Abdallah Clark	23
From the bulletin board	Mail to all		5
Full screen editing of BASIC	Word processing	John Hamilton	21
Games information	General interest	Robert Brown and Stephen Judd	4
Gemini special characters	Word processing	Jim Petersen	21
Include program listings in text	Word processing	Ed Kennedy	23
Instructions for TI-Writer	Word processing	Dick Altman	13
Let's talk interrupts	Software hints	John Phillips	9
Letter head design	Word processing	Ken Burdges	29
Letters to editor	Club affairs	John Ryan	7
Mail merge	Word processing	Arthur Author	22
Multiple copying of groups	Word processing	Paul Sparks	22
Only one disk drive?	Word processing	Alan Eason	20
Page numbering	Word processing		20
Print the unprintable	Word processing	Steve Citron	21
Printing document files	Word processing	Tom Rhodes	22
Program to type in	Drunkman	Marcello Zannini	14
Program to type in	Procedures GUESSNUMBER		16
Program to type in	Procedures for POET		16
Program to type in	Procedures for RACE		17
Program to type in	Procedures for SHOOT		16
Programs in DIS/VAR 80 format	Word processing	Rich Hubbard	21
Publications library report	Club library	Warren Welham	4
RAMcard tip	Let's talk RAMdisks	John Willforth	3
Reading other newsletters	Software hints	John Parkins	7
Recover edit	Word processing		21
Regional group reports	General interest		31
Secretary's notebook	Club news	Terry Phillips	2
Superscripts and subscripts	Word processing	Leonard Posusta	26
TI-Writer TL comand	Word processing	Tom Kennedy	26
TI-Writer as a data base	Word processing	G.Matthews and M.Gordon	23
TI-Writer common questions	Word processing	Tom Kennedy	12
TI-Writer for novices	Word processing	Stephen Shaw	10
TI-Writer mnemonic tricks	Word processing		12
TI-Writer modifications	Changing @ and &	Rick Cosmano	19
TI-Writer modifications	Changing defaults	Joseph Spiegel	6
TI-Writer modifications	Changing print device	Rob Goff	6
TI-Writer modifications	Formatter screen color	Rick Cosmano	19
TI-Writer printer character set	Word processing	Harvey Rich	29
TIshUG software column	Club software	Terry Phillips	2
Techo time	Double density cntrlr	John Paine	3
The Transliterate command	Word processing	Bern Dehlin	27
They're off	General interest	Geoff Trott	1
Tiger Cub TI-Writer experiments	Word processing	Jim Peterson	25
Transliteration commands	Word processing		26
Two spaces after '.'	Word processing		20
Use of asterisk, etc.	Word processing	Jim Petersen	20
Using BASIC to set up printer	Word processing		25
Using special character mode	Word processing		28
Want extra spaces?	Word processing	Jim Petersen	21
What will the print look like?	Word processing	Dave Renkenberger	21
Windowing got you down?	Word processing	Gary Fuquay	20
XB TI-Writer discovery	Word processing	Gary Cox	25
Younger set	Prog., adventure hints	Vincent Maker	6

TIshUG Sydney Meeting

The next meeting will be at 2pm on 9th April at Woodstock Community Centre, Church Street, Burwood.

Note that all members of more than 2 years continuous membership can renew for half price if they contact the secretary before 12 noon on April 1.

They're off

by Geoff Trott

I must apologise for the lateness of the last issue. I hope you all received it in time, which would only have been because of the speed of Australia Post. I managed to get the bundle of TNDs to the post office at 2.30 pm on Wednesday, as a result of a misunderstanding between the printers and me. Next month we will be better (I hope!). Also, there were at least 2 TNDs sent out with blank pages. If you received one like that and would like a complete copy, send the incomplete one back with your address and name and I will send you a complete version. (As long as you had my column to read you should be happy!)

continued on page 30



Secretary's Notebook

by Terry Phillips

Three new members to welcome to the group since my last report. They are:

- W. Janssen - Hurstville
- Ennio Medici - Italy
- Lewis Griffiths - Old Bar

Ennio's membership now makes 2 overseas members within the space of a couple of months. Our fame must be spreading far and wide.

It was nice to see a number of members making the commitment to stay with the group and paying their renewal subscriptions at the March meeting. Most members subscriptions become due at the end of April 1988, so check your mailing label for expiry date and if you can make it to the April meeting bring that bit of extra cash with you to renew. Those who cannot make the meeting may mail their subscriptions to the club address. Do not forget, if you also subscribe to the BBS and Publications Library, to include those fees as well (\$5 for each of these services.)

Recently, donations were forwarded to both local and overseas software authors as a gesture of goodwill and encouragement. Some favourable responses have been received and here is a sample.

From John Birdwell, author of Disk Utilities - "Thank you for your generous donation for my Disk Utilities program. Often times I wonder why I continue to develop and enhance this program since there is still an overall lack of support for FAIRWARE programs within the TI community. It is groups like yours that keep myself, and others like me supporting the TI."

From John A Johnson, author of ROS Menu program - "Thank you all so much for the kind words and generous donation you sent. I am without words to express my thanks. I am deeply honoured by your considering me a significant contributor to the TI community. This is a community I am proud to be part of. Many letters I receive ask me not to go to the 'IBM' word and to continue programming for the 4A. I always wonder why people think I would even consider stepping down from such a community and computer, to something as cold as an IBM clone. I would like to turn the request back to you, the UG. You are the backbone of the community; without groups such as TISHUG and MUG, we would be as cold, and as impersonal as the clone world. So my request - do not abandon this way of life we have all come to know and love, just for the sake of change. Programmers the world over are finally starting to understand how to operate this little computer, and it shows. We are seeing some fantastic software just being developed, and some old favorites being refined. We are on a roll!" Words, from John, well worth thinking on.

By the way, John was kind enough to send me the latest version, 7.3, of the Menu program, together with all his source code files. If you read this, John, a big thank you for this continued support.

John also sent me a copy of his program "Remind Me", which is an assembly calendar program with some very interesting features. John suggested I give it away as a door prize, but to be fair to all members and in particular country and interstaters who cannot get to meetings, I will award the program to the best entry I get on the theme of "Why I need a reminder calendar program." Entries will close with the Secretary on 30 April, 1988, whose decision shall be final.

Here is some news from Stephen Shaw, a member in the UK. The UK user group has licenced copying of TI Runner and has just concluded a deal with the author of TI Toad, Micro Pinball, Midnight Mason and Burger Builder to distribute these games. They were fortunate in being able to find a source of ROMOX programmable modules, apparently before they all disappeared to Czechoslovakia, where they supply a source of cheap Eproms. The UK group have been able to supply their members with these, programmed to order for five pounds - about \$12.50. They have also been extended from the original 8K to 32K.

Here is a recommendation from Stephen. Turbo Pasc 99 from Texaments is claimed by him to be easier to use than TI Pascal and does not require the P-Code card. On benchmarks he has performed Turbo Pasc 99 ran 13 times faster than TI Pascal. (If any member has a copy of Turbo Pasc 99 and would like to submit a review and/or article please do so.)

A word about future Meeting dates. As Woodstock is closed on April 2 (Easter Saturday), the meeting has been moved to the second Saturday of that month, April 9. In May and October it is proposed to hold full day tutorials, with topics yet to be refined. Remaining monthly meetings have not yet been refined around any themes, but if you have any ideas please pass them on.

Finally, I would be interested to hear if any members are interested in activities away from the computer. For example, as a group we can obtain discounts on movie tickets, live theatre etc.

All the best till next month.

TISHUG Software

Column by Terry Phillips

Apologies to those members who wanted the "flippy" versions of disks 168 and 169 at the March meeting. Time, the old enemy, beat me in preparing the disks. Be assured however they will be available at the April meeting.

Here is a list of new disks added to the library.

- DISK A171 - TI Artist Fonts, Instances and Pictures - dozens of different files on this disk which runs to 691 Sectors.
- DISK A172 - TI Artist Instances with some fonts. Also contains a program to convert Artist instances to XB programs in merge format. 718 Sectors.
- DISK A173 - Graphx Fonts, Clipart and Pictures. If you have Graphx then this is an excellent companion disk. 697 Sectors.
- DISK A174 - Graphx Fonts, Clipart and Pictures. More for Graphx. 679 Sectors.
- DISK A175 - Graphx Fonts, Clipart and Pictures. More for Graphx. 702 Sectors.
- DISK A176 - RLE Pictures - a great selection of pictures for this popular program. Many not seen before. 702 Sectors.
- DISK A177 - RLE Pictures - more great pictures. 677 Sectors.
- DISK A178 - RLE Pictures - yet more pictures. 661 Sectors.
- DISK A179 - ROS MENU V7.3 - the latest Menu version for your RAM Disk. 249 Sectors.
- DISK A180 - ROS SOURCE - Source code. 398 Sectors.
- DISK A181 - ROS SOURCE - More source files. 437 Sectors.

At the shop at the April meeting will be the following new disk releases.

1. ROS MENU V7.3
2. RLE PICTURES 1
3. RLE PICTURES 2
4. RLE PICTURES 3
5. CLOCK ROUTINES

Again this month, there will be no tape issue, as I am waiting on receipt of some suitable programs that can be placed on tape. Last month I had intended putting some programs from disks A168 and A169 on tape, but there were only about 2 programs that could be loaded to tape from those disks. In the interim, pending arrival of some programs, any member who has a specific program in mind and would like a copy on tape can write and request same.

I understand the software competition judges have been heavily involved in their judging duties and that we can look forward to an announcement at the April meeting of the winning entry.

More software news next month.

Techo Time with John Paine

Double Density Controller Card Arrives

by John Paine, TISHUG

The AT Disk Controller Card is now available in limited quantities for the PE Box. The card allows the upgrading of the standard TI Disk system to the most (A)dvanced (T)echnology disk control system available to the TI community today. This board comes from TISHUG innovator, Peter Schubert, and is constructed on a very attractive high quality PCB complete with gold connectors and professional green solder mask. It can be expanded to include the enhanced RS232, PIO and 32K Memory options. The Expanded version is referred to as the MULTIFUNCTION CARD.

There has been a delay in release of the disk controller because of a problem of incompatibility with the TISHUG and Horizon RAMdisks. A change to a faster chip on the data bus has cured this problem. The card is now fully compatible with the Horizon and Myarc 512 card but has not been tested with the CorComp RAMdisk at this stage.

The D/C board will double the capacity of the old TI Disk Drive, and if a modern double sided drive is added to the system, 1440 sectors of data can be stored. The card supports up to 4 drives, with the head step times of each drive individually set with dip switches.

A number of assembly routines have been added to the DSR ROM, and can be accessed by standard TI CALLS from BASIC or Extended BASIC. The DSR rom is a massive 256K EPROM, and is the largest DSR produced for a TI peripheral. It is bank selected as 4 banks of 8K bytes per bank in the standard TI address space at 4000 hex. The CALL routines are listed in the documentation supplied with card, and covers 6 pages of the 12 page document.

The DSR routines are compatible with CorComp, Myarc and Millers Graphics Enhancements and of course the card is compatible with the TI card it is meant to replace. At the time of writing, all software tested will load and run.

The AT Disk Controller Card and the MULTIFUNCTION Card are available from the TISHUG shop, or from Peter Schubert at P.O. Box 28, Kings Cross, 2011. Price of the D/C card is \$240.00 (all prices in \$ Australian), and for the MULTIFUNCTION card with twin RS232 and PIO fitted and tested, the price is \$350.00. The 32K byte memory option adds a further \$40.00. The total price for a fully configured card which will replace the TI Controller Card, RS232 Card and 32K Memory Card is only \$390.00.

As an introductory offer, Peter is offering trade-in allowances on old TI Cards, so the MFC becomes even more affordable. Peter can also be contacted for further enquiries on 612 3585602 (International) or (02)3585602 (Domestic).

RAMcard Tip

Let's talk RAMdisks

by John F. Willforth.

We have a problem as TI99/4A users these days that most market viewers and many TI owners would not have believed possible just a few months ago. There are FOUR major vendors of RAMdisks in the U.S.A. There is also a variety of features and sizes in these units, some of which are not found in units being produced for Atari, Commodore, Apple, or the P.C. lines of computers. The biggest problem facing the user now is "which to buy?".

The purpose of this article is to provide some thoughts and facts to help you decide. The next several paragraphs are not intended to promote any one of the RAMdisks mentioned and may contain erroneous information, hopefully by omission rather than commission.

First a RAMdisk is by definition a software/firmware supported RAM circuit board emulating a DISK. i.e. a circuit card, that when plugged into your PE box, will allow you to store and retrieve disk type files to/from the unit with the same ease as you would to your physical disk drive (DSK1 for example).

Because RAM is not a mechanical device, it is not subject to the delays of positioning a read/write head over a cylinder (TRACK) and waiting for the diskette to now rotate to the desired sector and then read/write DATA from/to the spinning disk in serial (like cassette) form. These three mechanical limitations are the main reason that disks are slow. Yes, disks are faster than cassettes as RAMdisks are faster than disks, no matter which brand you buy.

The major two types of RAMdisks are those using dynamic RAM (Myarc, CorComp) and static RAM (Horizon, Mike Ballman enhanced Horizon [sold by Bud. Mills]).

* Dynamic RAM is less expensive, larger capacity but requires more support circuitry, draws more power, and is more cumbersome if power is lost (like turning off the PEB).

* Static RAM is lower power and easy to support during power outages, but is more expensive and takes more space on a board, and thus for the amount of memory needed, more expensive than dynamic RAM.

I would like to talk about additional features. The first one that I am asked about most is the "spooling" feature. All but the Horizon and the enhanced Horizon, have the spooling feature. Up to this day, all that have spooling do it in a different manner but just as effectively. Some of you may ask "What is spooling?". Well to make it simple, spooling is storing data that is going to a device (printer modem, etc.) in memory space and releasing it as it can be used by the receiving device. Remember the TI sits there sending to the printer until all the file is sent. Then it is able to accept your next command or continue instructions. A spooler accepts this information as if it were the printer, modem etc., and at a much higher rate than any of those and in most cases will accept the entire file to be processed in a few seconds versus several minutes. The TI99/4A will then assume that all that it had to do was done and come back to you for further use, when in fact the job is still being completed by the spooler at a pace that the printer, modem etc, can handle. Pretty neat! Huh!

Another feature is partitioning, or multiple disks being assigned within a single RAMdisk card. What this means is that if you have a single drive on your system (DSK1 for example), you may call a portion of a RAMdisk DSK2 or DSK3, DSK4 etc. Now you have one physical and up to who knows how many other disks which are part of the RAMdisk.

Still another feature is built in commands. Each disk mentioned above has its own set. For example, you can type "CALL DM" in BASIC command mode and a file called DM1 will be booted from the disk, followed by DM2. Many commands dealing with memory are incorporated.

Features such as CLOCK. (Time Of Day), Analog-To-Digital, etc., are now becoming available on RAMdisks.

You may need more information to order your RAMdisk than I have provided here. The next article will get more specific in each RAMdisk, but if you believe the advertisements, maybe you can understand them a little better now, and be ready to JUMP IN. Good Luck!

Retyped by John Ryan of TISHUG for the TEXPAC BBS, 17th February 1988.

Games Information

by Robert Brown and Stephen Judd

Welcome to another Games Info. We do not have much to say this month due to lack of response from members, so here is a review of Meteor Belt, because it is in this month's downloading.

How to play and master Meteor Belt.

You have the option of playing against the computer or a partner. If you play against a friend (or enemy) it may or may not be simple. That depends on you and your opponent.

What I especially enjoy about this game is that when playing against the computer, I can decide to either put the computer out of its misery quickly or go for the big score. Putting it out of its misery gives it a low score and myself a higher score. But by NOT trying to destroy the computer's ships and just knocking off as many targets as I can, I can go for the big score. If you decide on the latter, bear in mind that the computer has no such choice. It goes for points and has no intention of blowing everyone of your ships away.

All the instructions following will assume that you are using joystick (but you can use keyboard). Answer the questions and off you go. The game comes up and you see a meteor belt with different sized and coloured rocks. Stay away from the red ones, as they deduct points. The smaller meteors give you more points. The purple satellites can be shot for points, but are more effective being used as weapons. Your 8 ships (only one in play at a time) are behind barriers which are behind shields. Both of these afford some protection from the laser fire of your opponent or the destructive power of a satellite sent on a collision course. You will note also an energy meter. You have power to shoot only when the meter is in the green. Each shot does not take too much power. There is an exception.

You fire your laser with the fire button and move left or right as usual. Remember those barriers? Well they can also be used as drones. They will take of and try to track your opponent's ship but they do not always hit it. They will still damage his shield or barrier if they strike them. To launch them is simple. If any part of one of your barriers is still there, position your ship behind it and push the joystick forward and fire. You or your opponent can blast them down before they hit you or your shields.

The purple satellites can be blasted for points. The computer, being a clever fellow will also use them that way but will mostly use them more effectively by getting behind them and send them off against you and here the points can really add up. You can do the same to him by positioning your ship under a satellite, pull the joystick DOWN and FIRE (this makes a purple laser). This sends them off against your opponent. If they strike another satellite before getting to the barrier, both are blown up with no points. They can be hit by laser in this mode and destroyed. If they hit a barrier or shield they explode against it. If the shields and barriers are down and they pass into the opponents area, 2000 points are scored. In this game the barriers and shields do not last very long. If you hit the satellite straight on, it goes straight up but you can get it to go on an angle by hitting it on the side. Using the laser in this way uses up a lot of power and it will be several seconds till you can use the laser again.

When all of one side's ships are destroyed the victor is awarded 1000 additional points for each of his remaining ships. You may win a game with 10,000 points, but if you go for a high as possible score, the sky is the limit. •



Publications Library Report

by Warren Welham

Some more lists of the library will be available at the next meeting for those who missed out on them last month. I am contemplating putting out a list of the overseas publications we have and which issues. This would enable you to know if we have a issue you might have found mentioned in another publication. Please let us know your thoughts on this, either on the BBS username LIBRARY, or by seeing me at the next meeting.

New Tnd's arrived this month

March 1988 (4)

Appeal: Anyone who has any Tnd's (Snd) they don't want Please donate them to the library.

New Books arrived this month

Code	Title	Author
00206	Editor Assembler Manual	T Instrument
00207	Ram Disk Operating System Ver.7.1 Operating System	-
00208	Hrd+ Ramdisk Construction Guide	Bud Mills
00209	" "	"
00210	" "	"
00211	" "	"
00212	" "	"
00213	Introduction to Assembly Language for the TI	R Molesworth

New Arrivals of Overseas Publications

Group	Publications Name	Date
Melbourne User Group	Melbourne Times	Dec 87
Brisbane User Group	Bug Bytes	Dec 87
Leigh 99'er Computer group	-	Jan 88
Hunter Valley 99ers user group	Hunter Valley News	Dec 87
Micropendium	-	Jan 88
Adelaide Computer club	Aticc	Dec 87
Central Ohio Ninety Niners inc.	Spirit of 99	Jan 88
Central Ohio Ninety Niners inc.	Spirit of 99	Dec 87
The Ottawa TI-99/4A user group	Newsletter	Dec 87
The Ottawa TI-99/4A user group	Newsletter	Jan 88
Ryte Data	R/D Computing	Jan 88
Edmonton 99'er users society	99'er Online	Dec 87
Edmonton 99'er users society	99'er Online	Jan 88
San Diego Computer society	TI-Sig	Nov 87
San Diego Computer society	TI-Sig	Dec 87
San Diego Computer society	TI-Sig	Jan 88
Tacoma 99ers users group	-	Nov 87
Tacoma 99ers users group	-	Dec 87
Tacoma 99ers users group	The Tacoma Informer	Jan 88
Leigh 99'er Computer group	-	Nov 87
Leigh 99'er Computer group	-	Dec 87
Northern New Jersey	-	Dec 87
Northern New Jersey	-	Jan 88
Rocky Mountains 99er's	Tic Talk	Dec 87
Rocky Mountains 99er's	Tic Talk	Jan 88

The Communicators

Special Interest Group for Users of the TEXPAC BBS,
by Ross Mudie, 8th March 1988.

This month there have been many other demands on my time, so this column will be of necessity fairly short.

1. UPLOAD/DOWNLOAD PROBLEMS.

There has been a steady trickle of complaints from users, of problems with program Upload and Download. The system currently in use on the BBS uses OLD and SAVE from TI console BASIC or TI Extended BASIC. (TI BASIC and X/B programs can only be downloaded with a TI99/4A home computer). If interference occurs on the telephone line, then it is likely that the number at the centre top of the screen will go wild instead of counting down by one, once every 8 seconds. Sometimes interference causes the program to be corrupted without any obvious indicators at download time. Interference problems are most likely if the user's phone line is connected to a Step by Step telephone exchange. A number change will be necessary to change to a newer exchange type if this is a problem. The numbers for Telecom Business Offices are found in the front of your local area telephone directory.

Any noise interference on the line, (crackling etc), will cause data errors to occur and the line should be repaired. Your modem should be wired so that it cuts off ALL telephones once the modem is on line.

A problem that I have encountered on UPLOAD when using FAST TERM as the terminal emulator, up to the point when the upload actually occurs is as follows.

When using FAST TERM, I use a disk log which sends a CONTROL S to the BBS at the commencement of saving the file to disk. If the program to be UPLOADED has been named to the BBS and the upload instructions are complete then the BBS is waiting in the UPLOAD mode. If the user then uses FCTN B to save or FCTN QUIT which automatically saves the log file to disk, then FAST TERM sends the CTRL S to the upload routine of the BBS which then will not respond to the SAVE RS232. In fact the number 255 will come up on your terminal screen and not count down after 15 seconds.

Sometimes the only way to get out of an error situation with program download or upload, is to hang up and call again, hopefully getting an interference free line on the next call.

2. SESSION TIME LIMITS.

As most members are aware, TEXPAC BBS has a 30 minute time limit for calls commencing between 2pm and midnight and a very generous 60 minute time limit for calls which commence between midnight and 2pm. Of late some users have been exceeding the time limit, especially in the busy 7pm to midnight period. If you want another session in the same evening then please wait 30 minutes before calling again.

Please respect that others may be trying to use the BBS and just cannot get on. By observing the time limit, especially in the busy evening period, the resource of the BBS will be best shared by all users.

From the Bulletin Board

MAIL TO : ALL
MAIL FROM : SHANE

Wow! Got a good racing car program or space invaders style shoot'em-up game which really takes its toll on your wrists when using a joystick? Well, I used to have that problem, but now I have

"THE WHEEL"

In my considered opinion, THE WHEEL is the Ultimate car controller for your TI (with adaptor) Commodore or Atari computers. "THE WHEEL" is equipped with micro switches, sporty steering wheel, Gas and Brake pedal and fire button.

It really takes the pain out of arcade games, and either simply sits on your lap, with the foot pedal on the floor, or The Wheel can be placed on a desk next to, or in front of your console. Actually, I am very proud of this unique piece of equipment, as it is only the second one made (prototype) by a friend's father who happens to be an engineer. I gave him the idea, plus a set of micro switches, and he instantly got a mental picture of what was required, and produced (within 2 weeks) two working models. These two prototypes are made from superbly crafted timber (5 ply) and the micro switches within both the foot pedal and steering column are very responsive with very little movement needed. The friend who designed and built these two prototypes, will be hopefully marketing these units, in the not too distant future.

Cheers 4 now, SHANE

MAIL TO : ALL
MAIL FROM : LARRY

Anyone using CorComp TripleTech Card and wanting the time display at the top right hand corner of the screen, the way to do it is:

CALL LINK("SETCLK","HHMSS")

For example, if the time is 6.30 type

CALL LINK("SETCLK","063000")

then press enter then type NEW, ~~NOTE~~ this operation is not listed in the CorComp manual. Bye for now.

MAIL TO : ALL
MAIL FROM : CHEMTECH

Does anybody have any information about the software that being developed to enable the TI to read IBM disks? I think the Funnelweb people were doing it. I heard about it at one of the regional groups last year, but since then have heard nothing about it. I could make a lot of use of it, as I have access to an IBM-PC at work, and of course, "old faithful" TI at home.

Regards.....Tony B.

MAIL TO : ALL
MAIL FROM : ACE

Wanted! Wanted! Wanted!

A copy of GENE-III please!

Please ring after 6pm John 6702050

For Sale For Sale For

MAIL FROM : DOBELL

****Surplus to needs****

1 TI SSSD disk drive (PE box)	\$50.00
1 TI 32K memory card	\$50.00
1 pair TI Joy sticks	\$10.00
2 sets Multiplan	\$60.00 each
2 sets TI-Writer	\$60.00 each
1 User's Reference Guide	\$5.00
1 Extended BASIC as new	\$50.00
1 Terminal Emulator II as new	\$50.00
1 Beginner's BASIC book	\$5.00
2 dual cassette cables	\$10.00 each

Games: Buck Rogers, Parsec, TI Invaders All as new still in original boxes PH 699 5137 (Business Hours) will accept reasonable offers

DOBELL

MAIL TO : ALL
MAIL FROM : UNCLE

**** FOR SALE ****

I have a number of surplus items for sale as follows:
1 black and silver console complete with manuals, UHF modulator, power supply and dual cassette cable.....\$80
Extended BASIC.....\$50
TE II.....\$50
Numerous modules....Tombstone City, Munch Man, Hustle, Moon Mine, Parsec, TI Invaders, Number Magic, Meteor Multiplication, Milliken Fractions... all boxed and with instructions..... \$10 each.

I also have (believe it or not!) a TRS-80 16k colour computer complete with cables, manuals and a tennis game module all in original box for \$70. Anyone out there interested?

For any of the above items please contact "UNCLE" via the BBS, or phone (02) 456 2588. Les Tomlinson.

Jenny's Younger Set

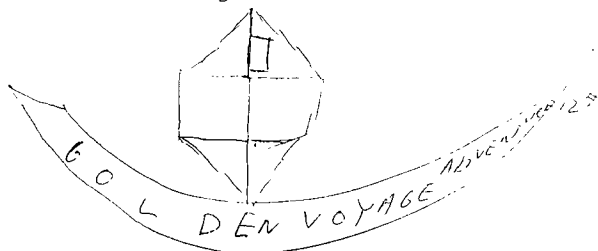
Thank goodness for Vincent Maker or I would fall asleep and never wake up! Vincent has sent in an improved version of his Footy Tab program. What about some others taking a program like that and make your own changes to it. It is a good way of learning to program. Here is Vincent's contribution.

Dear Jenny,

There may have been a mistake or two in the Footy Tab program I sent you last month (January/February TND). So to supplement, I have sent you another improved version of the program. I hope it comes in handy for any people planning on taking a punt on the football this year and whenever. The program is on side B of the cassette. Here is my one line guessing program;

```
100 INPUT "A number (0-10)-":A :: RANDOMIZE ::
    B=INT(RND * 10) :: IF A=B THEN PRINT "RIGHT" ELSE
    IF A>B THEN PRINT "TOO GREAT" ELSE PRINT "TOO
    SMALL"
```

Here is a drawing.



Having trouble with the Merchants? They just want to sell you something.

Walk up/walk down the stairs.

The statue, you can use the stairs to break him (think of how to do this...opposite of pull).

Some liquids are wrong liquids.

The tablets go in the fountain.

Save the game as you go along.

All the best, Vincent Maker

```
100 REM *****
110 REM *FOOTY TAB PROGRAM*
120 REM *
130 REM *BY VINCENT MAKER.*
140 REM *
150 REM * MK. II *
160 REM *****
170 CALL CLEAR
180 DISPLAY AT(3,1):"NEW IMPROVED FOOTY TAB PROGRAM"
190 DISPLAY AT(5,1):"BY VINCENT MAKER"
200 INPUT "ANYTIME YOU ARE READY,PRESS ENTER.":SDFS$
210 CALL CLEAR
220 ONE=0 :: TWO=0
230 FOR T=0 TO 9 :: CALL COLOR(T,2,8):: NEXT T
240 PRINT
250 CALL CLEAR
260 INPUT "NAME TEAM ONE-":ONE$
270 PRINT
280 INPUT "NAME TEAM TWO-":TWO$
290 PRINT
300 PRINT "-----"
310 PRINT
320 INPUT "DID TEAM ONE HAVE A WIN LAST
    WEEK(Y,N)?:":WIN$
330 PRINT
340 INPUT "DID TEAM TWO HAVE WIN LAST WEEK(Y,N)?:":WIN2$
350 PRINT
360 INPUT "IS IT A HOME GAME FOR TEAM: 1 OR 2(TYPE 1 OR
    2)-":HOME
370 PRINT
380 INPUT "TYPE TEAM ONE'S POINTS ON THE TABLE-":ONE
390 PRINT
400 INPUT "TYPE TEAM TWO'S POINTS ON THE TABLE-":TWO
410 PRINT
```

```
420 PRINT
430 PRINT
440 CALL CLEAR
450 DISPLAY AT(5,1)BEEP:"THE RESULTS *** *****"
460 FOR T=0 TO 9 :: CALL COLOR(T,3,12):: NEXT T
470 CALL SOUND(400,400,0,400,0,110,0)
480 CALL SOUND(400,400,0,400,0,110,0)
490 CALL SOUND(400,660,0,150,0,400,0)
500 FOR T=0 TO 9 :: CALL COLOR(T,2,8):: NEXT T
510 IF WIN$="Y" THEN ONE=ONE+1 ELSE TWO=TWO+1 ELSE WIN
    AND WIN2$="N" THEN ONE=ONE AND TWO=TWO
520 IF HOME=1 THEN ONE=ONE+1 ELSE TWO=TWO+1
530 IF ONE>TWO THEN ONE=ONE+1 ELSE TWO=TWO+1 ELSE IF
    TWO=ONE THEN ONE=ONE+1 AND TWO=TWO+1
540 CALL CLEAR
550 IF ONE>TWO THEN A$=ONE$
560 IF TWO>ONE THEN A$=TWO$
570 IF ONE=TWO THEN A$="IT WILL BE VERY CLOSE,IF NOT A
    DRAW"
580 CALL CLEAR
590 CALL SCREEN(8)
600 DISPLAY AT(5,1)BEEP:"THE PROBABLE WINNER IS ";A$
610 INPUT "WOULD YOU LIKE TO PICK ANOTHER
    WINNER(Y,N)?:":AS$
620 IF AS$="Y" THEN 220
630 PRINT
640 PRINT
650 PRINT "HOPE YOU WIN!BYE!"
660 END
```

continued from page 19

Change Printer Device for Formatter

I received the enhancements to the TI-Writer, I was quite pleased with what it provided, with the exception of the Text Formatter that defaults to an RS232 serial output. I personally, have a parallel printer output, so I had to modify this setting each time I wanted to print a document. The other day I was browsing through the mail on CompuServe and ran across the solution to this problem. So if you have a parallel printer (or any serial printer with a baud rate other than 1200) and want to change your default settings permanently, follow these instructions.

If you are changing the disk as it was received from the Club library then power up DISKO and select option 1. Go to section 50 hex, the beginning of line 3. Use FCTN 2 to switch to ASCII, and you will see "RS232.BA=1200". Position the cursor over the "R" at the beginning of the line and type "PIO.LF" then blockout the rest of the existing information, through "LF" with spaces (or change 1200 to the baud rate of your printer). Next hit FCTN 8 and answer "Y" to the prompt. That is it. Now when you print out a document and come to the printer default all you will need to do is hit ENTER and you are off and running.

In case you have transferred FORMAL to your own disk, you can use option 2 of DISKO to locate the beginning of FORMAL, proceed ten sectors, and you will find the printer default information.

(Rob Goff - MANNERS)

Changing TI-Writer Defaults

To change the printer default on TI-Writer, load the FORMAL file onto a newly initialized disk. Boot FORTH and load the Editor (type -Editor). Remove the FORTH disk and insert the disk with FORMAL file. Type in 10 EDIT. The printer format will be shown on the screen starting line 12 column 30.

Replace the current settings with whatever you wish, being sure to start at the same screen location and space over any extra characters in the old default setting. Then exit the Editor using FCTN 9 and use FLUSH to write the corrections to the disk. Then leave FORTH, resave the modified FORMAL file to your working copy of TI-Writer and you are in business.

(MICROpendium note: We found the RS232 command line to be on screen 8 near the end of line 10.)

(Joseph H. Spiegel, Shippingport Reg.UG)

Letters to the Editor

Dear Geoff,

Congratulations on your appointment as TND Editor. Your opening remarks attracted my attention and prompted me into offering my services as a typist. I am learning to type, so do not expect any volume in quick time at this stage. Ross has already had a taste of my work and no doubt you may find the odd error.

There seems to me to be a mutual concern in regards to falling membership. In most voluntary organisations, too much is expected of a few willing workers. Involvement by as many members as possible at the same time in a project is most desirable. The Software Competition is a good example of SOME members getting into the act. With this thought in mind, may I suggest that we start by mailing through the BBS a personal request to each member to participate. I shall elaborate by example in the next few days when I am in a position to clearly place the thoughts in my mind on "paper".

During this, my first year with the Club, I have been putting together a rig consisting of a modem, twin 40 track DSDD disk drives and of course my CSI, mostly with Peter's Mini PE/BOX.

I believe that OUR CLUB has a future and that the TND is a worthy medium with which to HOLD, RECRUIT and REHABILITATE PAST MEMBERS.

A TND that is eagerly awaited for its NEWS value, will do more to hold members interest than any other thing, in my opinion as a country type. Items to interest all sections is not an easy task. NEW products, OLD and NEW programs, (Centerfold staple/liftout) (sounds interesting, any ideas for models? ED) for independent filing and an Overseas Section. All ideas that are going to cost more to make this journal a tool to promote an interest in all members past and present, must require money from consolidated revenue. You cannot take it (the money! ED) with you and it will not be doing justice to past members who contributed, to see this Club die. Let us make the TND so good that when we post a copy to our ex-members they will see the light! Who knows we may have a resurgence in membership numbers.

The next two issues are vital to our new year membership drive. Release in the new year of cut price goodies in hardware, publications and software are an idea to promote continuation of membership. Concessions for our hardpressed Junior or student or pensioner members is worthy of serious consideration by the directors.

Publishing a breakdown of the "standard" of members' knowledge of TI and their equipment may help to orientate the thinking of members towards submitting items for you to include in future editions. For example

- 10% Games only
- 10% TI BASIC
- 50% TI-Ex/BASIC
- 10% Assembly Language
- 10% Active Programmers
- 10% Technically inclined

Even some idea of the number of years of membership for each current member would be interesting. I see no harm in letting people know the interest other members have in belonging to the Club. No doubt after spending considerable sums on equipment one would perish the thought of the club folding.

Assuring you of my earnest endeavour to assist you in presenting an interesting and informative News Digest

Kind regards
John W. Ryan
21 Fuller St.
Mullaway
N.S.W. 2456

Why I Enjoy Reading Newsletters

by John Parkins, Spirit of 99, Nov. 1987

Re-typed by John Ryan OF TISHUG.

There is so very much that can be learned from others and there is no end or limit to this process. All you have to do is look! Browsing through back issues one can find most anything.

September 1987 Front Ranger's article by Joe Nuvolini explains that Steve Paterson of New Horizons had purchased a disk from Genial Traveler, (Barry Traver's Diskazine), and got a very useful tip to use with an XB program in memory. With it, when you try to list your program you get the "WARNING NO PROGRAM PRESENT" message. Has that ever happened to you? This he explained is obtained by loading 255,0,255,0 into address -31952. He tells you how this is done. Load an XB program into your console and ENTER

CALL PEEK(-31952,A,B,C,D)

then two colons :: and then type PRINT A,B,C,D. Note and remember the values of the A,B,C, and D. Next ENTER

CALL LOAD(-31952,255,0,255,0)

If you try to list the program you will get the NO PROGRAM message. If you type in

CALL LOAD(-31952,A,B,C,D)

again and replace or insert the values you noted before, instead of A, B, C and D, you will find that you can now list it again. This can be both interesting and fun if you try it! HOW DID HE USE IT? That was what caught my eye. On his RAMDISK no less, the one that has John A. Johnson's Menu Program on it, (what a beauty it is). He wanted a fast way to access XB without selecting option C and having the system try to access drive one (DSK1.). (This is a must if you do not have a Gram Kracker with Danny Michaels updated version of Extended Basic that bypasses the access to drive one). This Super Extended Basic Cartridge can be purchased by itself also from TRITON which contains 33 new and 6 modified commands for U.S.\$59.95. I do consider this one a must for anyone, really. Well anyway, he wrote a one liner like:-

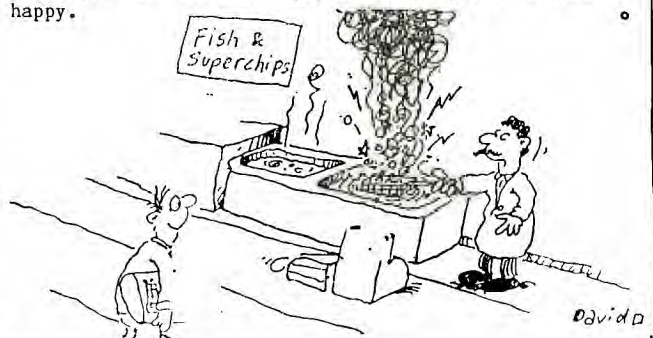
100 CALL INIT :: CALL LOAD(-31952,255,255,0),

and saved it to his RAMdisk, and put it as Option 9 on the Menu as Extended Basic. When selected it runs the one liner and clears the Memory and all without trying to access the drive or type in NEW and he is ready to start programing. All very neat really.

Joe's article goes on to tell you how you can delete lines from the beginning or end of the program in a similar manner.

Thanks to both Steve Patterson and Joe Nuvolini for this one. Another good one that many of you may have forgotten, as I had, was noted by Joe, in another article concerning forgetfulness. Have you ever looked at your disks and noted many programs listed on the jacket or printout, but, you could not remember whether they were XBASIC or E/A programs, or perhaps you may never have known? Well instead of trying them this way or that, just pop them into your Funnelweb EDITOR and ENTER SD for Show Directory. After the directory is displayed, press FCTN= and the program will read the disk directory and tell you if a program is in XB or E/A. Thanks again Joe!

You may or may not appreciate these as such as I did but, if some of you are helped, then I will be happy.



File Processing

from SNUGLETter Dec. 1986 via LeHigh 99er Nov. 1987

File processing on the TI is not as difficult as you might believe. The hardest part for me was figuring out the "examples" that are in the owner's manual. They all went something like this.

```
100 OPEN #2:"CS1",INTERNAL,INPUT,FIXED
```

```
-  
- program lines
```

```
290 CLOSE #2  
300 END
```

This in my opinion falls under the heading of "poor documentation". What was left out was the most important part! I tried to get my computer to process files. I failed because I did not know what to tell the computer to do with the file once it was open. I could not get past the mental block that told me "File processing is different from Programming". In fact, programming is just a form of file processing.

The TI99/4A handles ALL input and output through files. Most of the time, we are completely unaware that we dealing with a "file" while programming. Page II-119 of the User's Reference Guide states "All TI BASIC statements which refer to files do so by means of a file number between 0 and 255 inclusive." File number 0 refers to the keyboard and screen of your computer and is always accessible. Statements such as PRINT, RESTORE, INPUT, etc., which refer to the keyboard or screen do require a file number with them. You can however, write a statement such as:

```
100 PRINT #0:"print this to screen"
```

```
IN +0
```

and have it do exactly the same thing as:

```
100 PRINT "print this to screen"
```

You can also INPUT from file #0, but since file 0 is always open, statements like OPEN #0 or CLOSE #0 will generate an error message.

All other open files must be referred to by their number. Remember that this number is only used by the program to remember which file is which and is not a part of the file at all. As a matter of fact, you could open a file with one number, process it somehow, close it, and then open the same file with a different number. All this within the same program!

Now that I have got you thoroughly confused, I will give you a short sample file processing program to try to clarify what I have been saying. Most of us think of a file as being a disk or cassette. While these are indeed a file to the computer, they are by no means the only ones we have available. This short program opens a file to the Speech Synthesizer, sets up a FOR-NEXT loop to print a couple of sentences to both the screen and the Synthesizer, and then closes the file. You will need a TEII module to run the program. If you do not have a TEII module, just change the file name in line 110 from SPEECH to PIO or whatever your printer requires. This will give output to the screen and the printer instead.

```
100 CALL CLEAR
```

```
110 OPEN #1:"SPEECH",OUTPUT
```

```
120 FOR Y=1 TO 7
```

```
130 READ X$
```

```
140 FOR X=0 TO 1
```

```
150 PRINT #X:X$
```

```
160 NEXT X
```

```
170 NEXT Y
```

```
180 CLOSE #1 190 DATA THIS IS A TEST OF THE SCREEN AND  
SPEECH FILES ON THE
```

```
200 DATA TEXAS INSTRUMENTS 99/4A HOME COMPUTER. IT  
SHOULD HELP
```

```
210 DATA TO DEMONSTRATE HOW ALL INPUT AND OUTPUT IS  
TREATED, AS A FILE BY THE COMPUTER
```

In this program line 110 OPENS a file to the Speech Synthesizer (or printer). Lines 120 to 140 set up some loops to read from the DATA statements and switch between files (0 and 1). Line 150 PRINTs the output to both outputs (0 and 1). Lines 160 and 170 increment the loops. Line 180 CLOSEs the computer's association with file #1 and lines 190 to 210 are the DATA read by line 130.

The point is that the lines between 110 and 180 are the ones that do all the work, whether you are working with a file or just printing to the screen, the programing is the same. All you have to do is tell the computer where you want the data to go to or to come from.

Try modifying line 110 from OPEN #1:"SPEECH",OUTPUT to OPEN #1:"DSK1.TESTFILE",OUTPUT. This will cause the second output (remember that #0 is going to the screen) to go to a disk in drive #1 under file name of "TESTFILE". Try some other experiments in line 110 like using "CS1", "PIO", or "RS232" instead of "SPEECH". These will cause the output to go to the cassette recorder, printer, or modem respectively in addition to the screen. Once you have mastered OUTPUTTING to peripheral devices, the next logical step is to learn how to get INPUT from them. Some devices, such as the printer or speech synthesizer, by their very nature are one way devices. Trying to get input from them would surely lead to hours of frustration. Keeping that in mind, we will concentrate on the devices that have two way communication with the computer. The disk drive and cassette recorder are the primary devices we use for file storage. My experience with cassette based files has left me somewhat dissatisfied. While there are provisions for storing SEQUENTIAL files on cassette, it is a cumbersome operation at best.

There also seems to be a bug in the I/O routines for input from cassette. If you do any file storage and retrieval from cassette, keep in mind that the delay between the prompt:

```
*PRESS CASSETTE PLAY CS1
```

```
THEN PRESS ENTER
```

and the actual reading of data is longer in most cases than the tone leading to the data. I have found that if I press ENTER first, then wait for the screen to scroll up 1 line before pressing cassette play that I have no problems. If you do not do this, the computer may miss the beginning of the file and give an error.

Since getting INPUT from cassette and disk is very similar, I will not spend any more time on cassettes. Getting input from a disk file is almost the same as sending output to it. First you have to OPEN the file to the disk. This is done exactly as before, except instead of "OUTPUT" following the file name, use "INPUT". The words INPUT and OUTPUT are two of the 4 modes that can be used to open a file. The third, UPDATE, is the default and means you can either read from it or write to it. If you do not specify one of the 4 modes, UPDATE will be assumed by the computer. The last mode is called APPEND and will only allow OUTPUT to the end of a file. Let us look at our program again. If you have not already done so, change line 110 to OPEN #1:"DSK1.TESTFILE",OUTPUT and run the program. Type in the new program below or modify the old one to match.

```
100 CALL CLEAR
```

```
110 OPEN #1:"SPEECH",OUTPUT
```

```
115 OPEN #2:"DSK1.TESTFILE",INPUT
```

```
120 FOR Y=1 TO 7
```

```
130 INPUT FILE #2:X$
```

```
140 FOR X=0 TO 1
```

```
150 PRINT #X:X$
```

```
160 NEXT X
```

```
170 NEXT Y
```

```
180 CLOSE #1
```

```
190 CLOSE #2
```

The main differences between this program and the first one, is that we have added a second file number and name to the program (line 115), changed the "READ X\$" to "INPUT #2:X\$", and deleted the data statements at the end of the program. We are now getting the data from the disk file that we just saved under the name of "TESTFILE", and #0 means the keyboard and screen. File #0 is an "UPDATE" type file, #1 is an "OUTPUT" type file and #2 is an "INPUT" type file.

This has been very basic stuff so far, but in order to learn "FILE PROCESSING", you must understand the basics of how your TI 99/4A computer communicates with its peripherals. Once you figure out that the computer treats EVERYTHING as a file, you will be on your way to writing your own file processing software.

retyped by John Ryan of TISHUG.

Let's Talk Interrupts

by John Phillips, USA

Reprinted from The National Ninety-Niner
Vol 1, no. 6, April, 1984

Let me introduce myself. My name is John Phillips and I am a former game designer of Texas Instruments, Lubbock. Some of my creations are HOPPER, MOONMINE, WORD RADAR, and I worked on BURGERTIME, DEMON ATTACK, MUNCHMOBILE, JAWBREAKER, FACEMAKER, TREASURE ISLAND, ANGLER DANGLER, SLYMOIDS, and just about everything else that came out of Lubbock this past year. My forte is TMS9900 Assembly language and that is why I am delivering this article to you. I plan to deliver an assembly language article every month to you devoted 99/4A hackers, out there. I still believe that the 99/4A is the best home computer on the market and I will quote that until the day I die. I would personally like to congratulate Don Veith for the task that he undertook, namely gathering all the 99/4A User Groups together and uniting them with one common bond. I plan to support all the programmers that want to keep the 99/4A alive. If you have any questions concerning programming (either BASIC, Extended BASIC, or Assembly language), just write to me and I will do my best to get your problem resolved. I did it on all the packages just mentioned above. I will do it for you, too!

The purpose of this article is to inform you about the ever present interrupts that occur every one-sixtieth of a second within the 99/4A. (Every 50th of a second in the Australian PAL compatible consoles). They are not magical, but they certainly do create a whole lot of havoc for the beginning assembly language programmer. I will try and explain what they are all about.

One problem with the TI99/4 was the inflexibility of the VDP interrupt routine. In an effort to make some previously impossible applications possible, the VDP interrupt routine was modified. This routine performs six basic functions.

1. Sprite motion
2. Auto-sound
3. System reset key (function =)
4. Screen timeout
5. GPL timer increment
6. Storing VDP status in GPL status block

In the TI99/4A, the first three of these functions are optional. The last three are not. The ability also exists to execute an additional interrupt routine. The execution of each phase of the resident interrupt routine depends upon a bit flag in CPU RAM (>8300->83FF) location >83C2. If the most significant nybble of this byte is 0, all phases of the interrupt routine will execute. Setting any of the bits in this nybble will disable some part of the interrupt handler as follows:

- bit 0 - disable sprite motion, auto-sound, system reset key
- bit 1 - disable sprite motion
- bit 2 - disable auto-sound
- bit 3 - disable system reset key

```
| a 1 1 | motion | sound | quit key |
```

For instance, if I wanted to disable the QUIT key, the assembly code to accomplish this desired feat is:

```
LI RO,>0100
MOV B RO,>83C2
```

For you Extended BASIC programmers, an accidental FCTN = is disastrous. You can prevent this by the following two immediate statements:

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

Voila! the QUIT key no longer functions. Use a load value of 0 to enable the QUIT key again. After the routine has handled sprite motion and auto-sound, and has checked for the system reset key, the timing functions are performed and the VDP status is stored. The interrupt handler then checks whether there is an external routine to be executed.

The existence of an external routine is determined by the word value at CPU RAM >83C4. If this location is zero, there is no external routine and the interrupt handling is complete. A non-zero value in this location is assumed to be a pointer to another interrupt routine. Control is passed to that location.

At this point in the processing, the workspace pointer indicates the GPL workspace (>83E0). If the routine is to use this workspace (a call to KSCAN, for example), the values in certain registers must be preserved as follows:

1. If the routine is operating in the GPL environment, the values in registers 13, 14, and 15 must be preserved.
2. If the routine is operating in the BASIC or EXTENDED BASIC environment (loading a program using the CALL LOAD), the values of registers 9, 10, 13, 14, and 15 must be preserved. Also, register 8 (>83F0) of the GPL workspace must be cleared regardless of whether or not that workspace is used.

An external routine may conclude by returning to the console routine with the GPL workspace active. At this time, register 8 is cleared and control is returned to the point at which the interrupt occurred. If preferred, an external routine may return directly to the point at which the interrupt occurred by loading the interrupt workspace pointer (>83C0) and performing a RTWP instruction. I highly suggest this method!

Here is an example of an interrupt driven program for you to review and enter in using the Editor/Assembler. This should clear up any confusion from the above article. Until next time.

```
DEF INT
REF VIBW

*
MYWS BSS >20
MYWS2 BSS >20
TIMER DATA 0 TIMER
INTWS EQU >83C0          interrupt workspace
GPLWS EQU >83E0          GPL workspace
*
MYNAME TEXT 'JOHN PHILLIPS '
BLANKS TEXT '
*
*****
* Program to demonstrate external interrupt code
*****
INT LMI 0                disable interrupts
LI RO,INTERR            get address of external
                        interrupt routine
NOV RO,@>83C4           tell interrupt handler
                        there is another routine
LMI 2                   enable interrupts again
*
INT LWPI MYWS           load my workspace for program
LOOP JMP $              same as "10 GOTO 10" in BASIC
*****
* External interrupt routine. If you followed the
* above code, you will realize that it does nothing
* except an infinite loop. This interrupt code will
* print my name out and erase it every 1/60th or
* 1/50th of a second.
*****
INTERR LWPI MYWS2      load another workspace so my
                        main one is not destroyed
MOV @TIMER,@TIMER     is timer zero?
JEQ TIMEUP            no, so exit this routine
DEC @TIMER            yes, so print my name
JMP INTRTN            and exit this routine

TIMEUP LI RO,60        reset counter
MOV RO,@TIMER         and save in RAM variable
LI RO,12+9            center of screen
LI R1,MYNAME RAM      address of my name
LI R2,14              14 bytes to write
BLWP @VIBW            write my name
LI R1,BLANKS          now point to blanks
BLWP @VIBW            erase my name. Do not blink!
INTRTN LWPI INTWS     restore interrupt workspace
RTWP                  return to my main program
*
END INT                load and go option
*****
```

*This file was kindly supplied by the Melbourne Users Group.

Word Processing

TI-Writer for Novices

by Stephen Shaw, LA Topics, V5.7

Now that we have FUNLWriter and BA-Writer there are a few more copies of TI-Writer around than there are TI-Writer manuals, and the manuals are not merely Copyright, but also costly to copy. So this article is for you if you have TI-Writer and no manual.

The menu choice is:

1. EDITOR
2. FORMATTER
3. UTILITY

Option 3 is a LOADER for machine code programs in memory image format - shown as PROGRAM on disk directories. The TI-Writer loader creates a unique environment, and is intended to be used for utility programs especially written for the module (none were written) but in practice you may find you can load many machine code programs with this option. If the console locks up or does strange things, it is probably because the program requires a specific part of the E/A environment which is missing. Got that option out of the way quickly! The other two will take longer.

First, OPTION 1. This creates a full screen editor, on which you create your text. The screen "paper" is 80 columns wide, and is shown to you 40 columns at a time. You do not have a full single character horizontal scroll, as the screen is split into three columns of 40 characters. The leftmost screen display is the first 40 columns. Then if you move the cursor to the right, you will trigger a switch to display columns 21 to 60, and finally 41 to 80. (FCTN 0 toggles the line numbers. If present, then the first screen will only show 34 columns.) When you select EDITOR you will note the cursor appears at the top of the screen, on what is called the COMMAND LINE. The use of this line is described in the section below on TEXT EDITOR COMMANDS.

First, let us create some words! See at the top of the screen some words, with some letters in CAPITALS? For instance Edit. The capital E means that if you enter an E on this line you go into EDIT mode, so type the letter E.

Did you hold shift down or have ALPHA LOCK on? No need to when in this area: Even with ALPHA LOCK off, capital letters will be entered.

Entering E causes the COMMAND line to leave the screen and you are presented with the start of your paper, on which you can type your letter. To return to COMMAND line, you press the keys FCTN and 9 ("BACK").

First though, let us look at all the instructions you can give to the computer while staying in the Edit mode. SHIFT and ALPHA LOCK have their usual uses! And you have an auto repeat on the keys. If you need to auto repeat a character using the SHIFT key, you can release the SHIFT key when auto repeat has started and just hold the main key down, SHIFT will be assumed to continue until you release the key.

ENTER will place an odd character on the screen, which looks like a small C over a small R. This is the Carriage Return symbol, and is NOT printed. It is important when REFORMATting - more later.

When you come to the end of a line and keep typing, WORD WRAP will move you to a new line automatically, and also ensure that you do not have a word cut in half in the process (you must be in word wrap mode, black cursor which is toggled with CTRL O, ED). Unfortunately, WORD WRAP takes a finite time, and even moderate typists will find that it pays to check the first word at the start of the wrapped line for missing letters. Our console lacks a keyboard buffer, and any keys pressed while WORD WRAP is in progress are ignored.

To end a paragraph, press ENTER and you will move to a new line, and a CR will be inserted at the end of the previous text.

Before we move on, TI-Writer is key compatible with Wordstar, should you use that program on another computer! However, in this article I shall not deal with the Wordstar keys, but rather with the more convenient use of the TI Function keys. As space is limited, each Edit mode command can only be described briefly here, but the following should help you make progress.

The Arrow keys: FCTN E S D and X move the cursor one space in the appropriate direction.

CTRL L moves the cursor to the top left of the screen, but keeps the screen display the same.

CTRL 6 moves the cursor to the first word in the PREVIOUS paragraph it is in the middle of, AND moves it to the top left of the screen, therefore moving the text on the screen, usually upwards! Paragraphs are collections of words between CR symbols. That is, each CR marks the end of a paragraph.

CTRL 8 is New Paragraph - it has the same effect as ENTER, it adds a CR and moves the cursor to the next blank line.

CTRL V moves the cursor to the start of its current line.

CTRL 9 is New Page. It inserts not only a CR but also a PA, which is also not printed. The PA symbol will cause your printer to move to a New Page.

CTRL 4 is a tricky one. When you type CTRL and 4, the text in the current paragraph moves up off the screen and the cursor moves to top left. However, the line of text that your cursor was on does NOT have a CR added to it!

FCTN 5 is Next Window and enables you to quickly flick through the three columns of page. It is cyclic, from far right you go back to far left.

FCTN 4 is Roll Down. The cursor moves down 24 lines (having the appearance of moving the text up 24 lines - the cursor keeps its position on screen!). If there are not 24 lines below the cursor, it moves to the end.

FCTN 6 is Roll Up and moves the cursor up 24 lines.

FCTN 7 is TAB (more later) and moves the cursor to the next tab setting to the right.

CTRL T moves the cursor to the next tab position to the Left.

CTRL 7 is interesting, it is the Word Tab. If there is not text after the cursor, the cursor will move one space to the right, otherwise it will move to the start of the next word.

All those commands move the cursor around, and for speed, remember that you have an auto repeat function on the keys! Other keys you may use in Edit mode are: FCTN 9 (or FCTN +) to go back to the COMMAND line.

CTRL 1 is your OOPS! key. In the commands below, if you press a key in error you can recover by immediately pressing CTRL 1. Note that word IMMEDIATELY. I do not mean quickly, but rather that pressing any key between the commands listed below and OOPS!, will stop OOPS! from working!

FCTN 1 - deletes the character the cursor is sitting on.

CTRL K - deletes all text to the right of the cursor to the end of the line.

FCTN 3 - not only deletes text but deletes the actual line.

CTRL 5 - really useful this one, it duplicates the line above. However it will also delete the line the cursor is on, so do not use it if the cursor is sitting on text you wish to keep.

That is the end of the commands OOPS! can reverse.

Now for some more commands.

- FCTN 0 is a toggle which enables you to display or not display the line numbers on the left side of the page. They are not printed anyway.
- FCTN 2 is INSERT character. Under normal circumstances, it opens up a line for text to be typed in. When done, (remember to end with a space) press CTRL 2, which is REFORMAT (if in word wrap mode, ED).
- FCTN 8 is INSERT line, and works by moving the line the cursor is on down, leaving the cursor on a blank line.
- CTRL 3 changes the screen color combinations - not very many choices but better than none.
- CTRL 0 toggles WORD WRAP. When the cursor is a solid block, the keys work as above. If you toggle WORD WRAP, the cursor becomes an open box and some keys work differently.

With WORD WRAP off, we are in FIXED MODE and the following key commands alter:

- Insert character (FCTN 2) will merely push the text to the right as you enter the inserted material, very like using INS when entered a Basic program. When the text is pushed to the right hand side of the screen, it starts getting deleted, so careful.
- Reformat (CTRL 2) is used to terminate insert mode, which is also terminated by use of the other cursor movement keys.
- New Paragraph, Last Paragraph, and Next Paragraph do not function in FIXED MODE.

You can also insert commands to your printer into the text, using CONTROL MODE. CONTROL MODE makes available from the keyboard, ASCII characters 0 to 31, so that you can send those codes to the printer. They are NOT printed, unless that is a part of your printer instruction set. See your printer manual for details.

You enter CONTROL MODE by pressing CTRL U, which causes the cursor to become an Underline (notice that the cursor shape always tells you which mode you are in, Word Wrap, Fixed, or Control). With the Underline cursor, you have access to the lower ASCII codes by pressing the following key combinations: ASCII 1 to ASCII 26 are simple SHIFTED A to Z and ASCII 0 is a SHIFTED 2 (@). That is easy to remember. Then you will need to write these down:

```

ASCII 27 - FCTN R
28 - FCTN Z
29 - FCTN T
30 - SHIFT 6
31 - FCTN U
  
```

As you enter these low codes, odd characters will appear on the screen - they will not be printed - you will get used to their appearance in time. They are based on the Hexadecimal equivalent of the codes. Remember to switch OUT of control mode to use ordinary keys. Toggle with CTRL U.

Your printer may for instance require a character 15 to switch to condensed print mode. To insert a character 15 in your text, you can type in the following:

CTRL U then SHIFT 0 then CTRL U again.
 ESC is short for ESCAPE and is the ASCII value 27, or FCTN R.

Consult your printer manual for details of the codes your printer needs.

Note that TI-Writer and your printer may have similar codes. It is easy to be confused with the TAB settings on TI-Writer and those of your printer, but they are different things. It is usually easier to use TI-Writer TABs but for some difficult jobs it may be better to ignore TI-Writer TABs and set and use TABs on your printer. See your printer manual.

One example of compatible but different commands is the UNDERLINE. The keyboard has an underline as FCTN U, but the printer has an underline function available by using ESC 1 and ESC 0. If I use both, the printer prints a continuous underline, with a broken underline one pixel above it.

When you switch your printer on, wherever the platen is, and the paper held by it, is marked in printer memory as the start of the page. The printer then keeps count of the number of lines printed. If your printer has a default page length of 66 lines, and

after 40 lines you send a PA symbol, or the standard page feed character, ASCII 12, then the printer will move the paper up 66-40=26 lines. If you manually move the paper up or down, the printer does NOT count that movement. So if you are using either Form Feed command, take care to avoid all manual paper adjustments.

The command line

When the cursor is flashing in the COMMAND section of the screen, regardless of the prompt displayed you can go back to the initial command prompt by using FCTN 9, enabling you to quickly exit a function entered in error.

E for Edit we have seen puts the cursor onto the text screen.

PF for Print File then asks for device name (PIO for example). PF can also be used:

To print part of a text file by using line numbers in conjunction with the printer name.

L 16 PIO will print lines 1 to 16 to PIO

24 E PIO will print from line 24 to the end to PIO

To print text to a disk. Using PF instead of SF, you do not save the TAB settings to disk: important if you are using TIW to create a file which will be used as input for another program, such as Pilot 99, c99 etc.

Using disk or printer, you can add not only line numbers but also control letters in front of the printer name, for instance:

L 1 16 PIO will print the first 16 lines of text to PIO with the LINE NUMBERS, but the printed line will be shortened to 80 characters including the space the line numbers use, so text is liable to be lost. Adding a C will strip out control characters (i.e 1 to 31) from the text, while F sends text as FIXED 80 instead of the usual VARIABLE 80. (NOTE: TI-Writer can load and save both FIXED 80 and VARIABLE 80 files. They must however be DISPLAY type.)

SF (Save File) is used to save text to disk in the normal manner, and TAB settings will form the last data item in the file. Use 2 line numbers (or E) to save part of a file to disk. E stands for the end of the text presently in the console buffer.

LF (Load File) is used to load a DISPLAY 80 file from disk, and the file may be variable or fixed. If you precede the disk filename with line numbers you may:

Load part of a file:

(FirstLine,LastLine,filename)

1 20 DSKn.filename

Add disk file to existing text:

(AfterLine,1,LastLine,filename)

350 1 20 DSKn.filename

(NOTE: Should there be any text after the line where you add part or all of a file to it, the added text is inserted between. This means that with 350 used as the AfterLine, any text after line 350 would be added to the end of the other partial or full file.)

M (Move Text) 1stLine,LastLine,AfterLine will move chunks of text around. As with LF, it will insert between existing text with the other text being shifted.

C (Copy Text) is used like M except the original part of text that is moved also stays where it was, a mere duplication.

P (Purge) clears out the text in the buffer. It will also give you an opportunity to reconsider whether you want to do it. If you answer Yes and then want the text back, too bad.

RE (Recover Edit) may recover the text except for the first line. To be on the safe side, it is always a good idea to start your file off with a CR, thereby allowing to remember that line, should you need to RE.

- Q (Quit) exits the program, with choices of Save, Purge, or Exit.
- FS (Find String) will move the cursor to the first occurrence of the quoted string AFTER its present position. So move it to the start of your text to search the whole document. The text to be searched for is bracketed with slant signs, i.e. /find me/.
- RS (Replace String) replaces what you desire to omit with what you would rather have. /oldtext/newtext/ NOTE: RS uses INSERT and REFORMAT, which may damage your document if you are in WORD WRAP mode. Before using, change to FIXED mode, but also be wary if the new text is larger, you might lose text off the end of that line. You are given options of Yes, No, All or Stop upon finding the string to replace. If All is answered, and the file is lengthy, it could take considerable time to accomplish. So be patient. Once All has been selected, you cannot escape until completion.
- S (Show) is rather like BASIC's GOTO - you input the line number and the cursor will jump to it. (E will also work for end of file).
- SD (Show Directory) enables you to see what is on your disk. Remember to leave the directory by pressing ENTER. NOTE: If you are using TK Writer, this option does not work and will lock up your console without the appropriate "fix" added. This will result in loss of your file.
- T (TABS) will give you the TAB line. The first character the computer looks for is an L for left margin. You may also have an I for Indent - used for new paragraphs. TABS are already in place, if you do not wish them there, you may space them out. And set the right margin with an R. To edit text which is to the left of the left margin, (you can change TABS several times in a document), CTRL Y is the left margin release. There is no right margin release, you will have to reset the TABS. NOTE: REFORMAT works using the TAB settings AT THAT TIME.

TI-Writer, commonly . . . questions
by Tom Kennedy, L.L., 11/85

TI-Writer is an extremely powerful word processor, and much of this power is attributed to the many commands and features available only a keystroke away. The problem many find though, when learning to use this software, is "Which Keystroke to use?". Everyone has had one particular problem that stumped them for hours, only to find a simple answer, and wonder: "Why did I not see that?". In this section, we will attempt to cover some of these questions, perhaps the very ones you have on your mind. Also included are some little known tips to aid in using TI-Writer.

- Q. How do I backspace beyond the left margin?
- A. The keystroke CTRL Y will temporarily disable the left margin. NOTE: there is no right margin release.
- Q. How do I stop the printer from printing a blank page when printing through the formatter?
- A. The "quirk" of the unwanted blank page printed when using the Formatter has been eliminated in the new revised version of the FORMAL and FORMAL2 files, recently released to the public domain by TI. Another way is to select the single page option in the formatter menu, and reset the paper before printing.
- Q. When using the .HE command to print a "Header" and page number, how do you suppress the page number until a later page?
- A. The value of the page number in a Header or Footer is incremented on each page, and can be reset to start over at any number. To have NO value printed, (such as for the introduction of a book) use the .PA format command, with a value of zero. The page numbering will begin on the following page, and a ".PA" at the end of each page will delay the numbering further.

- Q. Can TI-Writer save a file in any format besides DV80?
- A. Yes, if you use the PF command to print a file, you can type "F" in front of the filename, as in: F DSKn.filename. The F will cause the file to print in DF80 format. The use of a "C" in front of the filename strips any control characters from the file as it is sent.
- Q. How do you reformat a table created in Fixed mode, without drawing the whole table into one paragraph?
- A. Unfortunately, this is not a convenient task. The only way is try a CR symbol after each line, and reformat each.
- Q. How do you use the Text Formatter, and what are Format commands?
- A. To start off with, the Formatter is a utility program that reads in a file, and interprets designated characters, or groups of characters, and performs certain functions on the text of the file. To use the formatter, you install these groups of characters, called Format commands, into your text where needed. Most of these commands follow the rule of starting with a period and starting at the beginning of a line. Numerical values are usually required, and must also follow in order. There are some format commands that consist of only one character, such as the ampersand, which underlines the following text.
- Q. How do the Transliterate commands work?
- A. The TL command is a special type of Format command that redefines any ASCII key value to equate to a string of character values. This is used to send specific code values to a printer in order to activate special functions. The format is ".TL xxx:aa,bb,cc,.." where xxx is the key to be redefined, and aa, bb, etc. are the subsequent code values being sent. You will have to check your printer manual to see which codes do what.

TI-Writer mnemonic (memory) tricks
from Orange County UC, 10/85

CTRL	MNEMONIC	FUNCTION	ALTERNATE
A	Advance Down	Roll Down	FCTN 4
E	Back Up	Roll Up	FCTN 6
C	Command Mode	Command Mode	FCTN 9
F	Flyaway Character	Delete Character	FCTN 1
G	Make a Hole for Char	Insert Character	FCTN 2
H	Hop Back to Last	Last Paragraph	CTRL 6
I	Indent	Tab	FCTN 7
J	Jump to Next	Next Paragraph	CTRL 4
K	Kill to End of Line	Delete to Line Ed	
L	Leap Home	Home Cursor	
M	Make New Paragraph	New Paragraph	CTRL 8
N	No More Line	Delete Line	FCTN 3
O	Open Blank Line	Insert Blank Lin	FCTN 8
P	Page Beginning	New Page	CTRL 9
R	Reformat	Reformat	CTRL 2
T	Tab Back	Back Tab	
V	Veer to Left	Cursor to Line Start	
W	Word Tab	Word Tab	CTRL 7
Y	Yank Margin Control	Left Margin Release	
Z	Zip Back	OOPS!	CTRL 1
		Screen Color	CTRL 3
		Duplicate Line	CTRL 5
		Next Window	FCTN 5
		Word Wrap	CTRL 0
		Line Numbers	FCTN 0

Note: The arrow keys work with both the Function Key or the Control Key.



Instructions for TI-Writer Word Processor

by Dick Altman, USA

It CAN be mastered! It just takes perseverance and determination and a desire to do it. I have been using TI-Writer since January 1985 and I do not have it all yet, but I can use it to my immense satisfaction. This came from months of sitting with the large manual in my lap flipping pages back and forth until I had practically memorized the #\$\$@ thing! I was at the point where, when I had a problem I could say "Oh that is on page 146" or whatever. For instance: this article was done using TI-Writer, and I now do ALL of my correspondence with it also.

If you received the disk with this article, load it up in TI-Writer and call it up on the screen so that you can see which commands were used, and where they were used, to cause the different effects shown in this article. If you received the disk only, then you are not reading this unless you have already booted it up. It is suggested that you run off a printed copy, then reload this back up so that you can see the commands in use as you read the article. There are comments in the program just below or above the commands that do not show in the printout! This is another 'FREEWARE' item. There is no price set for it. Feel free to pass a copy on to whomever wants it. If it will help only one or two people that are struggling to learn TI-Writer, I will be pleased. If you learn anything from it, and are inclined to fairness, send a few bucks when you can afford it to Dick Altman, 1053 Shrader St., San Francisco, CA 94117. There is no big deal if you do not; only your conscience will know. At least drop me a note and let me know it helped someone.

This is going to be loo-o-ng, but still much shorter than the 175 page instruction manual!

FIRST RULE: Read the TI-Writer Quick Reference card and reread it. Of course this means after you read this article. Do all of the operations shown on the card, at least once, even though you might think you will never need that particular one. You will find you have to open up the big manual probably, to accomplish some of the operations. After you have almost 'memorized' the card (literally!), then you will find yourself using TI-Writer almost exclusively and very seldom having to refer to the cumbersome manual. Personally I think the manual is poorly written.

You will find 3 'windows' (from left to right) to obtain the 80 columns (80 normal characters) width. Each window is 40 columns wide. The first one is from 0 to 40, second one is from 20 to 60, and the third is from 40 to 80. The first thing I do upon booting up TI-Writer is to set my limits to 37 characters wide. If I take a whole window of 40 characters, it seems to crowd my screen, and I do not like to window back and forth to read my work. I do this by pressing "T" (for TABS), then press ENTER, then placing an "L" on the second dot, and an "R" on the 39th dot, then pressing ENTER again. (If your TV or Monitor is adjusted well, then the L can be left at the zero character position for 40 characters. ED). Now I find my cursor blinking at me from line #0001. Here is where I tell the printer what margins I want it to print my work within. It is also at this point that I select condensed type because I like it better than the normal size type, and I can get 132 characters per line if I wish. It just looks better in my opinion. I normally do this on line 0002 because I used 0001 to set up the formatting (margins, etc.) commands to the printer.

So on line 0001 I put in the following 'dot' command (a dot command is merely starting with a period): '.LM 0;RM 54;FI;AD' (and end ALL dot commands with a 'carriage return' with no space in front of the c/r). The semicolons are necessary, and the spaces, just as I listed it here. I'll do it again: '.LM 0;RM 54;FI;AD(c/r)'. You of course do not put in the line number 0001. That is already there.

That tells the printer to set the Left Margin at 0, the Right Margin at 54, then Fill each line, and Adjust (justify) the right margin. The 'Fill' command tells the program to put in as many whole words on a line, within your predetermined margins, as possible. The 'Adjust' tells it to add extra blanks between words to cause the even right margin as this article has.

I changed the margin settings on the last two paragraphs just to show you that you can enter your 'commands' just about anywhere within your work!

Just pressing ENTER will normally automatically put in the 'carriage return' symbol, but sometimes it does not. It depends on what you were doing last. In that case, use Control and 8 to put in a carriage return.

On line 0002 I put in a 'Control' command thusly: 'Control U Shift 0 Control U'. Neither a 'dot' at the beginning, nor a 'carriage return' at the end is necessary. This command throws the printer into 'condensed' type. (Removed for this printing ED.) Neither of these two lines will be printed on paper. They are merely formatting commands. Most of the 'Control' commands are listed at the bottom of this article.

Then if I want to center a title (or date) or some other heading at the top of my article, on line 0003 I put in another dot command like this: '.CE' (remember a carriage return is required at the end of all dot commands). If my title is say three lines of type, then make that dot command thusly: '.CE3(c/r)' otherwise it will 'center' only one line. The centering command at the top of this article was '.CE5' because of the blank line in it. The lines you wish centered have to immediately follow the centering command.

The automatic page length is 66 lines. This gives you about six blank lines at the top and bottom of your page, and only fifty some actual lines of type. You can, with a dot command, change your page length with this: '.PL ##' as I did in line 0002 of this article. (Not enough room in 0001)

Then you start typing your article, letter, whatever. If you wish each paragraph to be indented, it takes another dot command of: '.IN(number)'. If, as in my suggested margin settings of '.LM 0;RM 54', you wished to indent each paragraph five spaces, the command would be: '.IN +5' because the counting starts at zero or left edge of the paper. If you include the indent command with others in line 0001, the semicolon replaces all but the first dot, thus '.LM 0;RM 54;IN +5'. You may put more than one dot command on one line, or the Control commands, but never both of them on the same line.

The fun part of a word processor is the capability of inserting or deleting a word or an entire phrase without having to retype the entire page or article. Another fun thing is the ability to move a sentence or an entire paragraph to another place in your work. This is all done very simply. Just place your cursor in the last space before where you wish to insert another word and press the FCTN key and the number 2. This causes everything beyond your cursor to move down one line, then type in your new word or sentence and after the space at the end of it press the Control and the 2 (just once) and everything will jump back up to your cursor! If you are near the beginning of a long paragraph it takes a little longer (a couple or three seconds) to reformat the paragraph, than it does if you are near the bottom of that same paragraph. Do not get impatient and hit the keys again, just wait a couple of seconds more!

To move let us say paragraph #10 into the #3 spot is just as easy. First look at paragraph #10 and make a note (mental??) of the line numbers on the first and last line. Function and zero shows the line numbers or moves them off the screen. Suppose they were 0076 and 0093. Then determine what line number you wish it to be after. Let us suppose it was 0023. Then with FCTN 9 go to the 'command' line, type M (for Move) and hit ENTER. Then type in 76 93 23 and hit ENTER again. Look at those numbers and read the instructions on the Quick Reference Card for Move.

continued on page 18

```

1 ! DRUNKMAN
AN EXTENDED BASIC PROGRAM
MARCELLO ZANNINI 1984
2 !
3 OPTION BASE 1 :: DIM A(3),
B(3),C(3):: CALL INIT :: CAL
L LOAD(-31878,21)
4 @=1 :: \=2 :: _=3 :: [=4 :
:] =8
5 CALL CLEAR :: CALL SCREEN(
\):: FOR I= TO ] :: CALL CO
LOR(I,9,@):: NEXT I :: CALL
NEWCHAR
6 CALL CLEAR :: CALL TITLE :
: CALL MUSIC
7 CALL KEY(@,K,S):: IF K=18
THEN 8 ELSE CALL KEY(O,K,S):
: IF S=0 THEN 7
8 CALL CLEAR :: CALL MAGNIFY
(3)
9 CALL CHAR(95,"1C3E1C083E1C
1C14",97,"0103000700070FOF",
98,"FFFFFFFOFOFFFFFF",99,"80
COOOEOOOEOFOFO")
10 CALL CHAR(100,"OF0FO70700
030001",101,"FFFFFFFOFOFOFO
F",102,"FOFOEOEOOOO008",113
,"FFFFFF")
11 CALL CHAR(104,"OF0FO80A08
0A0BOF",105,"FFFA2AEA2AEA2F
F",106,"FOFO30BO7070BOF",113
,"FFFFFF")
12 CALL CHAR(120,"192640405F
3F5F5B",121,"B8440204F8FOFEB
F",122,"395A5B9B7B5B1F1F",12
3,"33B3B3BEBECCBOFOFO",124,"FF
81FF81FF81FF81")
13 CALL CHAR(36,"01030FO3070
301010BO703030101010380COCOE
OEOCO80008080808000000000")
14 CALL CHAR(40,"01030307070
30301030303030101010180COFO4
OEOCOOOOAOOC0808000000000")
15 CALL CHAR(60,"03070FOFOFO
713130FO707070404040CO080COC
OC0802020C0808080808080C0")
16 CALL CHAR(108,"0302030101
0101010608304D426100FOCO40CO
8080808060100CB2B26408FO")
17 CALL CHAR(116,"01030FO307
0301010BO703030306081880COCO
EOEOCO8000COA0808080EO20")
18 CALL CHAR(128,"0103030707
03030103070BO303020EO880COFO
40EOCOOOOAOOC0808080C02030")
19 CALL CHAR(132,"0000000000
00000000444444EEAAAAEE000000
000000000000444444EEAAAAEE")
20 CALL CHAR(136,"0003070302
020202020405050809080700COEO
CO404040404020A020909010EO")
21 CALL CHAR(140,"0003010101
010101010204090908040300EOCO
CO4040404020DO0808C810EO")
22 IF SC>HS THEN HS=SC
23 M=3 :: BI,SC=0 :: PH=@
24 BI=BI+@ :: IF BI>[ THEN 2
5 ELSE 26
25 M=M+@ :: PH=PH+@ :: BI=@
26 CALL CLEAR :: CALL DELSPR
ITE(ALL):: DISPLAY AT(11,9):
"SCREEN :";BI :: DISPLAY AT(
13,10):"PHASE :";PH :: CALL
T(300)
27 Q1=INT(-\-PH/\):: Q2=INT(
[+PH/\):: Q3=INT(-7-PH):: Q4
=INT(- -PH/\):: Q5=INT(5+PH/
\):: Q6=INT(+PH/\):: Q7=INT
(\+PH/\)
28 CALL CLEAR :: ON BI GOSUB
34,43,56,69

```

```

29 DISPLAY AT(24,@)::"HI SCOR
E:";HS :: DISPLAY AT(24,17):
"SCORE:";SC
30 CALL HCHAR(\, \,95,M)
31 CALL SPRITE(#20,128,16,@,
40,#21,108,13,@,256,0,-.5)::
CALL SPRITE(#,40,16,153,6)
:: CALL HCHAR(,6,113,27)
32 GOTO 83
33 ! SCR 1
34 CALL COLOR(9,11,@,10,11,@
,11,16,@,12,5,@)
35 CALL HCHAR(@,@,32,)]:: A(
@),B(@),C(@)=] :: A(\),B(\),
C(\)=13 :: A(,B(,C(=18
:: AA=7 :: BB=17 :: CC=27
36 CALL HCHAR(9,@,113,32)::
CALL HCHAR(14,@,113,32):: CAL
L HCHAR(19,@,113,32):: CALL
HCHAR(22,@,113,32)
37 CALL VCHAR(9,\,124,5):: C
ALL VCHAR(14,12,124,5):: CAL
L VCHAR(14,22,124,5):: CALL
VCHAR(9,31,124,5)
38 CALL VCHAR(14, \,124,5)::
CALL VCHAR(19,\,124,5):: CAL
L VCHAR(14,32,124,5)
39 CALL SPRITE(#,140,14,129
,60,#,140,14,129,188,#[,136
,[,89,80,#5,136,[,89,208)
40 CALL SPRITE(#,132,7,49,4
0,#7,132,7,49,168)
41 CALL MOTION(#,\,0,Q1,#,0,
Q1):: CALL MOTION(#,0,Q2,#5
,0,Q2):: CALL MOTION(#6,0,Q3
,#7,0,Q3):: RETURN
42 ! SCR 2
43 CALL COLOR(11,8,1,12,5,1)
44 A(@)=6 :: C(@)=5 :: A(\)=
11 :: C(\)=10 :: A(=16 ::
C(=15
45 CALL HCHAR(@,@,32,)]:: CA
LL HCHAR(7, \,113,9):: CALL H
CHAR(6,14,113,7):: CALL HCHA
R(6,26,113,7):: CALL HCHAR(8
,20,113,5)
46 CALL HCHAR(9,16,113,)]::
CALL HCHAR(11,11,113,)]:: CA
LL HCHAR(11,24,113,9):: CALL
HCHAR(12,[,113,6)
47 CALL HCHAR(14,@,113,22)::
CALL HCHAR(16,25,113,)]:: C
ALL HCHAR(16,31,113,)\):: CAL
L HCHAR(17,6,113,)]
48 CALL HCHAR(19,\,113,5)::
CALL HCHAR(19,9,113,23):: CA
LL HCHAR(22,@,113,)\):: CALL
HCHAR([\, \,113,)\)
49 CALL VCHAR([\, \,124,)\):: C
ALL VCHAR(7,\,124,12):: CALL
VCHAR(7,[,124,5):: CALL VCH
AR(7,11,124,)]:: CALL VCHAR(
6,14,124,5)
50 CALL VCHAR(14,21,124,5)::
CALL VCHAR(16,31,124,)\):: C
ALL VCHAR(17,6,124,)\):: CALL
VCHAR(17,9,124,)\):: CALL VC
HAR(19, \,124,)\)
51 CALL VCHAR(6,19,124,)\)::
CALL VCHAR(6,20,124,)\):: CAL
L VCHAR(,24,124,)\):: CALL V
CHAR(12,9,124,)\):: CALL VCHA
R(11,32,124,5)
52 CALL VCHAR(6,31,124,5)::
CALL SPRITE(#,140,14,129,60
,#,140,14,129,188,#[,136,4,
89,80,#5,136,4,89,208)
53 CALL SPRITE(#6,132,7,33,7
0,#7,132,7,65,198):: CALL MO
TION(#6,0,PH+5,#7,0,Q3)
54 CALL MOTION(#,\,0,Q4,#,0,
Q4,#[,0,Q5,#5,0,Q5):: RETURN
55 ! SCR 3
56 CALL COLOR(11,5,@,12,14,@
)

```

```

57 C(@)=6 :: C(\)=11 :: C(
)=16
58 CALL HCHAR(@,@,32,)]:: CA
LL HCHAR(7,@,113,9):: CALL H
CHAR(7,13,113):: CALL HCHAR(
6,21,113):: CALL HCHAR(8,22,
113)
59 CALL HCHAR(9,16,113,5)::
CALL HCHAR(12,[,113,6):: CAL
L HCHAR(12,14,113):: CALL HC
HAR(14,15,113,7):: CALL HCHA
R(12,26,113,)\)
60 CALL HCHAR(17,1,113,)]::
CALL HCHAR(17,26,113,7):: CA
LL HCHAR(19,9,113,)]:: CALL
HCHAR(19,16,113,)\):: CALL HC
HAR(19,22,113,)]
61 CALL HCHAR(14,25,113):: C
ALL HCHAR(22,@,113,)\):: CALL
VCHAR(7,\,124,10):: CALL VC
HAR(17, \,124,5):: CALL VCHAR
(12,[,124,5)
62 CALL VCHAR(7,9,124,5):: C
ALL VCHAR(17,9,124,)\):: CALL
VCHAR(7,14,124,5):: CALL VC
HAR(12,15,124,)\):: CALL VCHA
R(6,20,124,)\)
63 CALL VCHAR(9,21,124,)\)::
CALL VCHAR(6,22,124,)\):: CAL
L VCHAR(12,25,124,)\):: CALL
VCHAR(12,29,124,5)
64 CALL HCHAR(7,26,113,7)::
CALL HCHAR(12,21,113,)\):: CA
LL VCHAR(7,31,124,10)
65 CALL SPRITE(#2,140,15,129
,60,#3,140,15,113,188,#4,136
,4,73,80,#5,132,7,33,198)
66 CALL SPRITE(#6,136,4,89,2
08,#7,132,7,49,70)
67 CALL MOTION(#2,0,Q1,#3,0,
Q6,#4,0,Q2,#5,0,Q7):: CALL M
OTION(#6,0,Q1,#7,0,Q4):: RET
URN
68 ! SCR 4
69 CALL COLOR(11,13,1,12,7,1
)
70 A(1)=7 :: B(1)=5 :: C(1)=
4 :: A(2)=12 :: B(2)=10 :: C
(2)=9 :: A(3)=17 :: B(3)=15
:: C(3)=14 :: CC=26
71 CALL HCHAR(1,1,32,8):: CA
LL HCHAR(5,24,113,4):: CALL
HCHAR(5,32,113):: CALL HCHAR
(6,16,113,3):: CALL HCHAR(8,
4,113,12)
72 CALL HCHAR(8,19,113):: CA
LL HCHAR(8,22,113,2):: CALL
HCHAR(10,24,113,4):: CALL HC
HAR(10,31,113):: CALL HCHAR(
11,12,113)
73 CALL HCHAR(13,4,113,7)::
CALL HCHAR(14,18,113,6):: CA
LL HCHAR(15,11,113):: CALL H
CHAR(15,25,113,3):: CALL HCH
AR(16,17,113)
74 CALL HCHAR(18,1,113,3)::
CALL HCHAR(18,6,113,3):: CAL
L HCHAR(18,12,113):: CALL HC
HAR(18,16,113,3):: CALL HCHA
R(18,22,113,3)
75 CALL HCHAR(18,28,113,5)::
CALL HCHAR(20,1,113,2):: CA
LL HCHAR(22,1,113,3):: CALL
VCHAR(18,2,124,2):: CALL VCH
AR(20,3,124,2)
76 CALL VCHAR(8,3,124,10)::
CALL VCHAR(11,10,124,2):: CA
LL VCHAR(11,11,124,4):: CALL
VCHAR(8,12,124,3):: CALL VC
HAR(15,12,124,3)
77 CALL VCHAR(6,15,124,2)::
CALL VCHAR(16,16,124,2):: CA
LL VCHAR(16,18,124,2):: CALL
VCHAR(6,19,124,2):: CALL VC
HAR(11,20,124,3)

```

```

78 CALL VCHAR(5,23,124,3)::
CALL VCHAR(10,23,124,4):: CA
LL VCHAR(8,24,124,2):: CALL
VCHAR(15,24,124,3):: CALL VC
HAR(15,28,124,3)
79 CALL VCHAR(5,31,124,5)::
CALL VCHAR(10,32,124,8):: CA
LL HCHAR(11,16,113,4)
80 CALL SPRITE(#2,140,14,121
,60,#3,140,14,97,188,#4,136,
4,81,80,#5,136,4,65,198)
81 CALL SPRITE(#6,132,7,41,7
0,#7,132,7,17,208)
82 CALL MOTION(#2,0,Q1,#3,0,
Q6,#4,0,Q2,#5,0,Q2):: CALL M
OTION(#6,0,Q1,#7,0,Q4):: RET
URN
83 ON ERROR 150
84 !
85 FOR I=1 TO _ :: IF I=1 TH
EN 86 ELSE IF I=2 THEN 87 EL
SE 88
86 P1=A(@):: P2=A(\):: P3=A(
_ ):: P4=AA :: GOTO 89
87 P1=B(@):: P2=B(\):: P3=B(
_ ):: P4=BB :: GOTO 89
88 P1=C(@):: P2=C(\):: P3=C(
_ ):: P4=CC :: GOTO 89
89 DISPLAY AT(P1,P4_)SIZE(
_):"abc" :: DISPLAY AT(P2,P4_
)SIZE(_):"hij" :: DISPLAY A
T(P3,P4_)SIZE(_):"def" :: N
EXT I
90 !
91 GOSUB 107 :: CALL POSITIO
N(#@,Y,X):: CALL JOYST(@,XX,
YY):: CALL KEY(@,K,S)
92 IF YY<0 AND XX<0 THEN X
2=0
93 IF K<>-@ THEN X1=XX :: IF
XX=[ THEN 103 ELSE IF XX=-[
THEN 105 ELSE 102
94 IF YY<0 OR XX<0 THEN 97
95 IF X1=-[ THEN CALL PATER
N(#@,36)ELSE CALL PATTERN(#@
,40)
96 GOTO 91
97 GOSUB 107 :: IF XX=-[ THE
N X=X- ] :: X1=XX :: CALL PAT
TERN(#@,116)ELSE IF XX=[ THE
N X=X+ ] :: X1=XX :: CALL PAT
TERN(#@,128)ELSE 99
98 GOTO 108
99 IF YY=[ THEN 117 ELSE IF
YY=-[ THEN 118
100 GOTO 108
101 !
102 FOR I=14 TO -14 STEP -\
:: CALL MOTION(#@,-I,0):: CA
LL T(8):: NEXT I :: CALL MOT
ION(#@,0,0):: GOTO 108
103 CALL PATTERN(#@,128):: F
OR I=12 TO -12 STEP -\ :: CA
LL MOTION(#@,-I,5):: GOSUB 1
07 :: CALL T(8):: NEXT I ::
X=X+32
104 CALL MOTION(#@,0,0):: GO
TO 108
105 CALL PATTERN(#@,116):: F
OR I=12 TO -12 STEP -\ :: CA
LL MOTION(#@,-I,-5):: GOSUB
107 :: CALL T(8):: NEXT I ::
X=X-32
106 CALL MOTION(#@,0,0):: GO
TO 108
107 CALL COINC(ALL,CF):: IF
CF=-@ THEN 150 :: RETURN
108 AE=INT((X+10)/):: IF AE
>32 THEN X=X- ] ELSE IF AE<
THEN X=X+ ]
109 GOSUB 107 :: CALL LOCATE
(#@,Y,X):: Y=INT((Y+15)/)::
X=INT((X+10)/):: CALL GCHA
R(Y,X,G)

```

```

110 IF G=98 OR G=101 OR G=10
5 THEN 125 ELSE IF G=122 OR
G=123 THEN 148
111 CALL GCHAR(Y+@,X,G):: IF
G=113 OR G=124 THEN 91 ELSE
150
112 IF L=0 THEN L=@ ELSE L=0
113 ON L+@ GOTO 114,115
114 CALL HCHAR(12,22-BI,120)
:: CALL HCHAR(12,23-BI,121)
: CALL HCHAR(13,22-BI,122)::
CALL HCHAR(13,23-BI,123)::
RETURN
115 CALL HCHAR(12,22-BI,32,2
):: CALL HCHAR(13,22-BI,32,2
):: RETURN
116 CALL HCHAR([,16,32,\)::
CALL HCHAR(5,16,32,\):: RETU
RN
117 Y=Y- ] :: YB=INT((Y+15)/
):: XB=INT((X+10)/):: CALL
GCHAR(YB,XB,G):: IF G>124 T
HEN Y=Y+ ] :: GOTO 91 ELSE 11
9
118 Y=Y+ ] :: YY=INT((Y+15)/
):: XY=INT((X+10)/):: CALL
GCHAR(XY,XX,G):: IF G>124 T
HEN Y=Y- ] :: GOTO 91
119 GOSUB 107 :: CALL PATER
N(#@,60):: CALL LOCATE(#@,Y,
X):: CALL POSITION(#@,Y,X)::
YB=INT((Y+15)/):: XB=INT((
X+10)/)
120 CALL GCHAR(YB,XB,G):: IF
G>124 THEN 91 ELSE CALL GC
HAR(YB+@,XB,G):: IF G>124 T
HEN 91
121 !
122 CALL POSITION(#@,Y,X)::
CALL JOYST(@,XX,YY):: IF YY=
[ THEN Y=Y- ] ELSE IF YY=-[ T
HEN Y=Y+ ]
123 GOTO 119
124 !
125 IF X=AA THEN 126 ELSE IF
X=BB THEN 127 ELSE 128
126 XY=A(@):: YX=A(\):: AX=A
A :: GOTO 129
127 XY=B(@):: YX=B(\):: AX=B
B :: GOTO 129
128 XY=C(@):: YX=C(\):: AX=C
C
129 CALL SOUND(100,345,0)::
IF G=98 THEN 130 ELSE IF G=1
05 THEN 140 ELSE 144
130 GOSUB 112 :: IF Y=10=XY
THEN 131 ELSE IF Y=5=XY THEN
134 ELSE 136
131 SC=SC+50 :: CALL HCHAR(Y
,X-@,32,_):: DISPLAY AT(20,A
X_)SIZE(_):"abc"
132 CALL GCHAR(20,7,G):: CAL
L GCHAR(20,17,HI):: CALL GCH
AR(20,27,GV):: IF G=32 OR HI
=32 OR GV=32 THEN 145
133 GOSUB 147 :: CALL POSITI
ON(#21,Y,X):: SC=SC+(X*BI*_
PH):: GOTO 24
134 SC=SC+50 :: CALL HCHAR(Y
,X-@,32,_):: DISPLAY AT(Y+5,
X_)SIZE(_):"abc"
135 DISPLAY AT(21,AX_)SIZE(
_):"hij" :: GOTO 145
136 CALL GCHAR(Y+5,X,G):: CA
LL GCHAR(Y+10,X,GH):: IF G=3
2 AND GH=32 THEN 137 ELSE 13
8
137 SC=SC+50 :: CALL HCHAR(Y
,X-@,32,_):: DISPLAY AT(Y+5,
X_)SIZE(_):"abc" :: GOTO 14
5
138 SC=SC+100 :: CALL HCHAR(
Y,X-@,32,_):: DISPLAY AT(Y+5
,X_)SIZE(_):"abc" :: DISPLA
Y AT(Y+10,X_)SIZE(_):"hij"

```

```

139 DISPLAY AT(22,AX_)SIZE(
_):"def" :: GOTO 145
140 IF Y=5=YX THEN 141 ELSE
142
141 SC=SC+50 :: CALL HCHAR(Y
,X-@,32,_):: DISPLAY AT(21,A
X_)SIZE(_):"hij" :: GOTO 14
5
142 SC=SC+75 :: CALL HCHAR(Y
,X-@,32,_):: CALL GCHAR(Y+5,
X,G):: DISPLAY AT(Y+5,X_)SI
ZE(_):"hij" :: IF G=101 THEN
143 ELSE 145
143 SC=SC+50 :: DISPLAY AT(2
2,AX_)SIZE(_):"def" :: GOTO
145
144 SC=SC+50 :: CALL HCHAR(Y
,X-@,32,_):: DISPLAY AT(22,A
X_)SIZE(_):"def"
145 GOTO 91
146 ! POINTS
147 SC$=STR$(SC):: FOR I=@ T
O LEN(SC$):: CALL HCHAR(24,2
5+I,ASC(SEG$(SC$,I,@))):: NE
XT I :: RETURN
148 CALL SPRITE(#21,108,13,@
,256,0,-,5):: GOTO 91
149 ! END GAME?
150 FOR I=@ TO 10 :: CALL SO
UND(100,I*110,0):: NEXT I ::
GOSUB 147
151 M=M-1 :: IF M=-@ THEN 15
3 ELSE CALL HCHAR(\,32,7):
: CALL HCHAR(\,95,M)
152 CALL MOTION(#@,0,0):: CA
LL SPRITE(#20,128,16,@,40,#2
1,108,13,@,256,0,-,1):: CALL
SPRITE(#@,128,16,153,6):: G
OTO 91
153 DISPLAY AT(12,7):"G A M
E O V E R" :: CALL JINGLE
154 CALL KEY(@,K,S):: IF S=0
THEN 154 ELSE 22
155 SUB MUSIC
156 DATA 131,175,147,196,262
,233,196,185,175,156,131,131
157 RESTORE 156 :: DIM Z(26)
:: Q=1.00001 :: W=1.500001 :
: R=-4 :: V=13 :: FOR I=1 TO
12 :: READ Z(I):: NEXT I
158 FOR I=1 TO 4 :: CALL SOU
ND(390+20*I,Z(I),0,Z(I)*W,W,
R,V):: NEXT I :: FOR I=1 TO
4 :: FOR J=1 TO 2 :: CALL SO
UND(-180,Z(I),0,Z(I)*W,W,R,V
):: CALL T(52):: NEXT J :: N
EXT I
159 FOR I=5 TO 12 :: CALL SO
UND(-7,Z(I),0,Z(I)*Q,W,R,V):
: NEXT I :: CALL SOUND(150,2
62,0)
160 SUBEND
161 SUB T(Z):: FOR I=1 TO Z
:: NEXT I :: SUBEND
162 SUB JINGLE
163 FOR I=5 TO 1 STEP -1 ::
CALL SOUND(250,I*110,0,-8,12
):: CALL SOUND(250,330,0,110
,7,233,10):: NEXT I
164 SUBEND
165 SUB NEWCHAR
166 DISPLAY AT(9,4)BEEP:"PRE
PARE DISK WITH TDATA" :: DIS
PLAY AT(11,6):"THEN PRESS <E
NTER>:"
167 CALL KEY(0,K,S):: IF S=0
THEN 167 ELSE OPEN #1:"DSK1
.TDATA",INTERNAL,INPUT ,FIXE
D 185
168 DISPLAY AT(21,4):"NOW LO
ADING MASTER DATA" :: CALL T
(500)

```

continued on page 17

LOGO procedures

This month we present some LOGO procedures for you to type in. You will need TI LOGO II cartridge and will also need to enable the turtle with a TELL TURTLE command before using some of these procedures. All LOGO programs are written in modular form, so to run a program you must type in all the procedures first, and then type in the main procedure name. If you have problems ask at your regional group meeting or send me some mail.

***Procedures for POET

```

TO POEMS
CS NOTURTLE
PRINT [HOW MANY POEMS DO YOU WANT?]
MAKE "N READNUMBER
CS PRINT [ ] PRINT [ ]
PRINT SENTENCE :N [POEMS BY THE LOGO POET ]
PRINT [ ]
REPEAT :N [POET PRINT [ ] ]
END
TO READNUMBER
MAKE "NUM1 READLINE
TEST :NUM1 = [ ]
IFT PRINT [PLEASE TYPE A NUMBER ] OUTPUT READNUMBER
IF BOTH FIRST :NUM1 = "-- NUMBER? FIRST BUTFIRST :NUM1 THEN OUTPUT - FIRST BUTFIRST :NUM1
TEST NOT NUMBER? FIRST :NUM1
IFT PRINT [PLEASE TYPE A NUMBER ] OUTPUT READNUMBER
IFF OUTPUT FIRST :NUM1
END
TO POET
MAKELISTS
PRINT LINE1
PRINT LINE2
PRINT LINE3
END
TO MAKELISTS
MAKEARTICLES
MAKEADJECTIVES
MAKENOUNS
MAKEVERBS
MAKEPREPOSITIONS
END
TO LINE1
OUTPUT ( SENTENCE ARTICLE ADJECTIVE NOUN )
END
TO LINE2
OUTPUT ( SENTENCE ARTICLE NOUN VERB PREPOSITION ARTICLE ADJECTIVE NOUN )
END
TO LINE3
OUTPUT ( SENTENCE ADJECTIVE ADJECTIVE NOUN )
END
TO ARTICLE
OUTPUT PICKRANDOM :ARTICLELIST
END
TO ADJECTIVE
OUTPUT PICKRANDOM :ADJECTIVELIST
END
TO NOUN
OUTPUT PICKRANDOM :NOUNLIST
END
TO VERB
OUTPUT PICKRANDOM :VERBLIST
END
TO PREPOSITION
OUTPUT PICKRANDOM :PREPOSITIONLIST
END
TO PICKRANDOM :OBJECT
MAKE "NUMBER RAND COUNT :OBJECT
OUTPUT PICK :NUMBER + 1 :OBJECT
END

```

TO WORDLISTS

```

CS
PRINT [ARTICLES: ]
PRINT [ ] PRINT :ARTICLELIST
PRINT [ ]
PRINT [NOUNS: ]
PRINT [ ] PRINT :NOUNLIST
PRINT [ ]
PRINT [VERBS: ]
PRINT [ ] PRINT :VERBLIST
PRINT [ ]
PRINT [PLEASE PRESS ENTER ]
PRINT READLINE
CS
PRINT [ADJECTIVES: ]
PRINT [ ] PRINT :ADJECTIVELIST
PRINT [ ]
PRINT [PREPOSITIONS: ]
PRINT [ ] PRINT :PREPOSITIONLIST
END
TO MAKEARTICLES
MAKE "ARTICLELIST [A THE ONE EACH EVERY ]
END
TO MAKEADJECTIVES
MAKE "ADJECTIVELIST [AUTUMN HIDDEN BUBBLING BOILING SWIRLING GREEN BITTER MISTY SILENT EMPT Y DRY DARK SUMMER ICY DELICATE ]
END
TO MAKENOUNS
MAKE "NOUNLIST [WATERFALL RIVER BREEZE MOON RAIN WIND SEA MORNING SNOW LAKE SUNSET SHADOW PINE LEAF GLITTER ]
END
TO MAKEVERBS
MAKE "VERBLIST [SHAKES DRIFTS [HAS STOPPED ] SLEEPS CREEPS MURMURS FLIES FLUTTERS [HAS FALLEN ] [IS TRICKLING ] ]
END
TO MAKEPREPOSITIONS
MAKE "PREPOSITIONLIST [ON IN OFF [OUT OF ] UNDER OVER NEAR BENEATH ERE OVER AROUND BELOW ABOVE ]
END
TO PICK :NUMBER :OBJECT
IF :NUMBER = 1 OUTPUT FIRST :OBJECT
OUTPUT PICK :NUMBER - 1 BUTFIRST :OBJECT
END
TO COUNT :OBJECT
IF :OBJECT = [ ] OUTPUT 0
IF FIRST :OBJECT = :OBJECT OUTPUT 1
OUTPUT ( COUNT BUTFIRST :OBJECT ) + 1
END
TO RAND :N
OUTPUT REMAINDER RANDOM4 :N
END
TO RANDOM4
OUTPUT RANDOM + 10 * RANDOM + 100 * RANDOM + 1000 * RANDOM
END
TO REMAINDER :NUM :DIV
OUTPUT :NUM - ( :NUM / :DIV ) * :DIV
END
** DONE **

```

***Procedures for GUESSNUMBER

```

TO CHECKGUESS :GUESS :NUMBER
IF :GUESS = :NUMBER PRINT [GOT IT! ] STOP
IF :GUESS > :NUMBER PRINT [TOO HIGH ] GETGUESS STOP
IF :GUESS < :NUMBER PRINT [TOO LOW ] GETGUESS STOP
END
TO READNUMBER
MAKE "NUM1 READLINE
TEST :NUM1 = [ ]
IFT PRINT [PLEASE TYPE A NUMBER ] OUTPUT READNUMBER
IF BOTH FIRST :NUM1 = "-- NUMBER? FIRST BUTFIRST :NUM1 THEN OUTPUT - FIRST BUTFIRST :NUM1
TEST NOT NUMBER? FIRST :NUM1
IFT PRINT [PLEASE TYPE A NUMBER ] OUTPUT READNUMBER
IFF OUTPUT FIRST :NUM1
END
TO GETGUESS
TYPE ""
MAKE "GUESS READNUMBER
CHECKGUESS :GUESS :NUMBER
END
TO GUESSNUMBER
CS
PRINT [SEE IF YOU CAN GUESS THE ]
PRINT [NUMBER I AM THINKING OF PRINT [IT IS BETWEEN 1 AND 100 ] ]
MAKE "NUMBER 1 + RAND 99
GETGUESS
END
TO RAND :N
OUTPUT REMAINDER RANDOM4 :N
END
TO RANDOM4
OUTPUT RANDOM + 10 * RANDOM + 100 * RANDOM + 1000 * RANDOM
END
TO REMAINDER :NUM :DIV
OUTPUT :NUM - ( :NUM / :DIV ) * :DIV
END
** OONE **

```

***Procedures for SHOOT

```

TO MISS
PRINT SENTENCE [MISSED SHOT NUMBER ] :SHOTNUMBER
WAIT 50
STARTTURTLE :XSTART :YSTART :HSTART
END
TO HIT
PRINT [CONGRATULATIONS! ]
PRINT [YOU HIT THE TARGET. IT TOOK ]
PRINT ( SENTENCE [YOU ONLY ] :SHOTNUMBER [SHOTS. ] )
END
TO SHOOT
MAKE "SHOTNUMBER :SHOTNUMBER + 1
PRINT [HOW FAR? ]
MAKE "SHOT READNUMBER
PENDOWN FORWARD :SHOT
MAKE "DIST DISTANCE :XTARGET :YTARGET
TEST BOTH :DIST > 0 :DIST < 10
IFT HIT
IFF MISS
END

```

```

TO READNUMBER
MAKE "NUM1 READLINE
TEST :NUM1 = [ ]
IFT PRINT [PLEASE TYPE A NUMBER ] OUTPUT READNUMBER
IF BOTH FIRST :NUM1 = "- NUMBE R? FIRST BUTFIRST :NUM1 THEN O UTPUT - FIRST BUTFIRST :NUM1 TEST NOT NUMBER? FIRST :NUM1 IFT PRINT [PLEASE TYPE A NUMBER ] OUTPUT READNUMBER
IFF OUTPUT FIRST :NUM1
END
TO DISTANCE :X1 :Y1
OUTPUT SQRT ( XCOR - :X1 ) * ( XCOR - :X1 ) + ( YCOR - :Y1 ) * ( YCOR - :Y1 )
END
TO CCIRCLE :R
HIDETURTLE
PENUP FORWARD :R
RIGHT 90
PENDOWN REPEAT 12 [RCP :R ]
LEFT 90
PENUP
BACK :R
SHOWTURTLE
END
TO STARTTURTLE :XSTART :YSTART :HSTART
PENUP
SKY :XSTART :YSTART
SETHEADING :HSTART
END
TO DRAWTARGET :XTARGET :YTARGE T
PENUP
SKY :XTARGET :YTARGET
CCIRCLE 10
END
TO RAND :N
OUTPUT REMAINDER RANDOM4 :N
END
TO STARTGAME
TELL TURTLE CS
HIDETURTLE
DRAWTARGET :XTARGET :YTARGET
STARTTURTLE :XSTART :YSTART :H START
SHOWTURTLE
END
TO STARTDATA
MAKE "SHOTNUMBER 0
MAKE "XTARGET ( 90 - 10 * RAND 19 )
MAKE "YTARGET ( 80 - 10 * RAND 6 )
MAKE "XSTART ( 90 - 10 * RAND 19 )
MAKE "YSTART ( - 10 * RAND 3 )
MAKE "HSTART ( 10 * RAND 36 )
END
TO START
STARTDATA
STARTGAME
END
TO REMAINDER :NUM :DIV
OUTPUT :NUM - ( :NUM / :DIV ) * :DIV
END
TO RANDOM4
OUTPUT RANDOM + 10 * RANDOM + 100 * RANDOM + 1000 * RANDOM
END
TO RCP :R
RIGHT 15
FORWARD :R / 2
RIGHT 15
END

```

```

TO SQRT :X
IF :X < 0 THEN OUTPUT 182
MAKE "SQ 0 MAKE "RT 1
REPEAT 181 [IF :X > :SQ THEN M AKE "SQ :SQ + :RT MAKE "RT :RT + 2 ]
OUTPUT ( :RT - 1 ) / 2
END
** DONE **

***Procedures for RACE
TO RESTART
SETSTART
RACECAR 0
END
TO COMMAND
MAKE "COM READKEY
IF :COM = "F MAKE "DISTANCE :D ISTANCE + 5 STOP
IF :COM = "S MAKE "DISTANCE :D ISTANCE - 5 STOP
IF :COM = "R RIGHT 30 STOP
IF :COM = "L LEFT 30 STOP
END
TO READKEY
IF RC? OUTPUT READCHAR
OUTPUT [ ]
END
TO CRASH
PRINT [YOU CRASHED INTO THE WA LL ]
END
TO DISTANCE :X1 :Y1
OUTPUT ( XCOR - :X1 ) * ( XCOR - :X1 ) + ( YCOR - :Y1 ) * ( YCOR - :Y1 )
END
TO CRASHED?
IF ( DISTANCE 0 20 ) > 4900 OU TPUT "TRUE
IF ( DISTANCE 0 20 ) < 2500 OU TPUT "TRUE
OUTPUT "FALSE
END
TO FINISH
PRINT [YOU CROSSED THE FINISH LINE ]
PRINT SENTENCE [WITH A TIME OF ] :TIME
END
TO FINISHED?
IF BOTH ( YCOR > 20 ) ( :OLDY < 20 ) OUTPUT "TRUE
MAKE "OLDY YCOR
OUTPUT "FALSE
END
TO CCIRCLE :R
HIDETURTLE
PENUP FORWARD :R
RIGHT 90
PENDOWN REPEAT 12 [RCP :R ]
LEFT 90
PENUP
BACK :R
SHOWTURTLE
END
TO RACECAR :TIME
IF FINISHED? FINISH STOP
IF CRASHED? CRASH STOP
FORWARD :DISTANCE
COMMAND
RACECAR :TIME + 1
END
TO SETSTART
SKY ( -60 ) 20
SETHEADING 0
FORWARD 1
MAKE "OLDY 1
MAKE "DISTANCE 0
END

```

```

TO DRAWTRACK
TELL TURTLE CS
SKY 0 20
CCIRCLE 50
CCIRCLE 70
LEFT 90
PENUP FORWARD 50
PENDOWN FORWARD 20
PENUP BACK 70
RIGHT 90
END
TO RACE
DRAWTRACK
SETSTART
RACECAR 0
END
TO RCP :R
RIGHT 15
FORWARD :R / 2
RIGHT 15
END
TO SQRT :X
IF :X < 0 THEN OUTPUT 182
MAKE "SQ 0 MAKE "RT 1
REPEAT 181 [IF :X > :SQ THEN M AKE "SQ :SQ + :RT MAKE "RT :RT + 2 ]
OUTPUT ( :RT - 1 ) / 2
END
** DONE **

```

continued from page 15

```

169 CALL CLEAR :: FOR X=0 TO 4 :: INPUT #1:C$ :: FOR Y=1 TO LEN(C$)STEP 16 :: CALL C HAR(48+INT(Y/16)+X*11,SEG$(C $,Y,16)):: NEXT Y :: NEXT X
170 INPUT #1:C$ :: CLOSE #1 :: SUBEND
171 SUB TITLE
172 CALL CHAR(98,"187EDBFF99 C3FFA53C7EDBFFC399FFA5"):: D $="020605160313021514021113"
173 CALL CHAR(100,"1C5C487F1 93C2662008EE83B3F6BC81846643 C98FE123A381813D6FCDC177100" ,143,"007E7E7E7E7E7E00")
174 CALL KEY(3,K,S):: CALL K EY(0,K,S):: IF S THEN 32767 ELSE CALL COLOR(11,1,1,12,1, 1,13,1,1)
175 CALL CHAR(113,"00183C7E7 E3C18",123,"00183C7E7E3C18", 132,"00183C7E7E3C18")
176 DISPLAY AT(3,1):RPT$("q{ "&CHR$(132),84):: FOR I=5 TO 9 :: CALL HCHAR(I,7,32,20): : NEXT I
177 DISPLAY AT(6,5)SIZE(20): " S O M E G U Y S " :: DIS P LAY AT(8,5)SIZE(20):" L I K E B E E R"
178 DISPLAY AT(19,3):CHR$(11 0);" 1984 MARCELLO ZANNINI": : " ALL RIGHTS RESERVED"
179 FOR I=1 TO 4 STEP .2 :: CALL COLOR(11,7,1,12,11,1,13 ,5,1):: CALL SOUND(-80,110*I ,3,112*I,4):: CALL COLOR(11, 5,1,12,7,1,13,11,1)
180 CALL SOUND(-80,140*I+1,3 ,142*I+1,4):: CALL COLOR(11, 11,1,12,5,1,13,7,1):: CALL S OUND(-80,180*I+2,3,182*I+2,4 ):: NEXT I
181 FOR I=7 TO 1 STEP -.25 : : CALL SOUND(-300,110*I,3,11 2*I,4,220*I,5):: NEXT I :: S UBEND

```

continued from page 13

On most dot matrix printers, there are two different commands to make neat printing. They are called 'emphasized' and 'double strike'. You can not use (on my printer at least) the emphasized method while in condensed size of type. But I can use double strike. The difference is basically this. Both commands print each letter twice, but in two different ways. One of them (emphasized) moves the head slightly to the right so that each letter is a little thicker. Double strike just prints the line twice. I think emphasized is slightly faster than double strike, but I have never timed either of them. Since I use condensed printing almost exclusively, and can not use emphasized, I do not worry about it. Incidentally, you may enter these commands throughout your article. You just have to have them begin at the left margin of your work. As long as you begin dot commands with a period, and the control commands with Control U (and end dot commands with a carriage return, and control commands with Control U and/or a capital letter) you will be O.K. (On the daisy wheel printer used here, double strike turns off at the end of every line, making it very difficult to demonstrate as the author would want. ED)

An interesting fact about most word processors is that they not only insert unobtrusive spaces here and there to Adjust each line to the predetermined right margin, they allow the printers to print every other line from the right to the left while doing all that Filling and Adjusting. TI-Writer will also correctly number your pages if you give it the FO command (with a %), which is another dot command.

I find once in a while, some one command (never the same one twice) seems to falter. Just redo it. Sometimes I think some command must be there that is invisible (this is possible!) so when you run into an unexplainable problem, go back to your formatting command line(s), which are usually lines 0001 and 0002, put the cursor at the end of each of your commands then press FCTN and 1 and hold them for a couple of seconds to delete any possible typing errors that placed some sort of 'hidden' command in that line. (One possible problem is the presence of a space after a number in a dot command. ED)

Another good command to learn is the 'OOPS' command. Merely Control and the number one. This eliminates only your last change just now typed in, and returns your work to its former self (hopefully!).

Another good habit to get yourself into, is 'SAVING' your work every few minutes (or every few pages). Power glitches do occur from any power company. Either surges, or stumbles. Sometimes just an electric motor in your home (refrigerator, etc.) kicking in will cause a momentary change in the power supplied to your computer (you have seen your lights flicker). If you save your work every once in awhile, you someday will be glad you were in the habit. Especially if you have just put into the word processor a 20,000 word story. The power glitch could cause you to lose it all! If you have been saving it on a disk, when that glitch occurs you will have all but a small part of it saved. When you save something to a disk, then come back to that same disk and save something else with the same name, it replaces the first item with the second. It does not become two separate items on the disk. Of course, if you are really a worry-wart, you will do the saving on two disks, alternating back and forth, just in case that glitch comes while you are in the act of saving your work.

When you wish to reload a file from a disk back into the word processor, it is easy! When you first bring up the word processor in the Editor mode, you are automatically in the command line. Just type LF (for Load File) and hit ENTER, then type in DSK1.(and the name you gave it) then hit ENTER again and wait a few seconds for the work to be loaded into your computer from the disk.

If you want a rough draft of your work on paper (I find it easier to proof than on the screen) just remove your commands for double strike or emphasizing to conserve your printer ribbon. It will not be so easy to read, unless your ribbon is new, but it will be done faster, as well as not using up ribbon ink unnecessarily.

In the book you will find two methods of going to the disk, then to your printer. Printing should be done from the disk, not from the computer. You will find a command of 'Print File'. That is not the one I use! The one I have become accustomed to using may take a few seconds longer, but it is the one I learned first, and I have just stuck with it. It is as follows. After I have finished typing my letter or whatever, return to the command line with FCTN 9, there type a Q (for Quit) hit ENTER, then S (for Save) and ENTER, then DSK1.TERRY or whatever name I want to give the file instead of TERRY, then ENTER. I usually use a short two or three character name. I have even been known to use #1, or #2, or something like that (the file name cannot be more than 10 characters long, and you can not have any spaces in a file name). Then, after the work goes from the computer to the disk, you can either print it now or sometime next week. The command to go to the printer at this point is like this: Q (for Quit) ENTER, then E (for Exit) and ENTER again. This takes you back to the master menu. This time, you select #2, or the FORMATTER. After it comes up, you have to type in DSK1.(filename) and hit ENTER. Then you have to type in the command telling it to go from the disk to the printer, instead of to the screen. (With the use of DISKO or some such assembly language disk repair program, you can insert the command to your printer so that it is a default just like all the other selections on the screen. It is in 'FORMAL' of your TI-Writer disk.) Without knowing what kind of printer you have, I can not give exactly the correct command here, but it will be something like this: PIO.LF or RS232.BA=4800.LF, then you will have five more choices, mostly for which you will just press ENTER for each of them. Perhaps you might wish more than one copy, so on the correct one you would punch in that number. Be sure your printer is turned 'on' before hitting the last ENTER,(the one that says "PAUSE AT END OF THE PAGE?") because you will be printing immediately afterwards.

For your purposes (manuscript writing) you may want your document double spaced. That is simply a dot command of '.LS 2' (LS for Line Spacing of course!), and if you want it triple spaced, just change the 2 to a 3. Or of course use it for a rough draft or some such. I am mostly just rambling here, to give this particular paragraph some length, so that you can see double spacing at work. I can not seem to think of anything else to say, so I will just end it here.

There are many, many more commands available, such as merging either parts of two different files, or merging a whole file into the middle of another, or putting in headers at the top of every page, and footers at the bottom, all automatically. Such things as page numbers, or requirements for manuscripts, etc., but those can be found as you need them.

The word processor does have a capacity beyond which you have to save your work to disk, and start with a clean slate. It is approximately 20,000 characters including blanks. I have only run into it when transferring a long story to disk. I was entering a 10,000 word story, and I got 'MEMORY FULL-SAVE OR PURGE' flashing at me at the top or command line after about 4,000 words (I wish it would ring a bell or something). At that point 'save' your work and retire that file name. Perhaps in this article I am writing for you I will reach that point again. Right now I am typing on line number 466. I think it was at about line 400 plus (but I was using 80 column width that time for a special project, I think) that the MEMORY FULL thing happened to me. You will just have to trial and error it for your job! Of course, the length cannot be judged just by the line numbers on the left side of your screen. Think about whether you are using

CONTROL COMMANDS

only one window, or two, or the maximum of three. I am using just one window while I do this work, as I explained earlier, so that will make my capacity come much farther down the line numbers than if I were using all three windows! 80 characters (or columns) wide, instead of the 37 I am using. If and when the MEMORY FULL bit happens to you, remember that when you save it this time to a disk, then for pete's sake do not save the next time to the same file name! In other words, my name for this file at the moment is TI-WRITER. If I need to make a new file, it will become TI-WRITER2.

The little 25 page booklet from Dr. Bill Browning is very good, do not ignore it when you are trying to learn the TI-Writer word processor. 7541 Jersey Avenue North, Brooklyn Park, MN 55428. Price just \$6.50 and worth every penny.

There is also available in 'FREEWARE' circles an excellent disk called "TK-Writer" which was done by Tom Knight, thus the 'TK'. It replaces the need for a cartridge to have TI-Writer word processing capabilities. As far as I can tell, it does exactly the same things the cartridge does, except for Show Directory, which is inconsequential, and will not go direct from the Editor stage to the Formatting stage. You can probably find it in the same library from which you obtained this disk. (Of course there is Funnel-Writer as well. ED)

The command for the underscore is merely the ampersand (Shift 7) and it can be used anywhere. Note even in the middle of the word 'cannot'. If you want to underline more than one word you have to connect them with what is called a caret. It is above the 6, or Shift 6. If you wish, the ampersand can be printed in your work, but not the caret (unless you define a transliterate ED). Merely type in two ampersands and only one of them will be printed! & &

Believe me, all of this will become easy and second nature to a good typist in a very short time! But if you do not use it for a month or two, you will find yourself going back and back and back again to the big book!

Thanks so much to Dr. Guy Romano for his assistance in writing this article, plus his enormous patience with my dumb questions over the past few months while I was learning the TI-Writer. Also to Hal White and to Larry Rosenberg for their invaluable assistance. And to Terry and Paul Anderman for their desire to have word processing capabilities, which forced me to finally write this that had been nagging at me so long.

TI-Writer Modifications

Formatter Default Screen Colour

Using a Sector Editor and a backup copy of the FORMAL file, search for 020007F5. The F5 is the Hex code for the Screen Color. I changed mine to FO for White on Transparent. Next, search for 800201F5. The F5 is the Hex code for the Character Color. Again I changed mine FO for White on Transparent.

For those that have the Gram Kracker and have combined the Editor and Formatter using TIWGRAMDISK. Load your TI-Writer into GRAM and search for the above codes. I found mine located at gL2A5 for the screen colour and gB2B4 for the character colour.

(Rick Cosmano - SoCal Comp Group)

Changing & and @ in :... Formatter

Search the F... file for 23214026. Change the 4026 to 605C. This will now allow you to use the & and @ as regular text characters. The 'Tick' (FCTN C) is now used for overstrike and the 'BACKSLASH' (FCTN Z) is used for underscore.

My Gram Kracker location was gA571. Search for the above Hex code in that location.

(Rick Cosmano - SoCal Comp Group)

continued on page 6

ASCII codes	Function	Format
0	Terminate Tabulation	CTRL U, SHIFT 2, CTRL U
7	Sound the buzzer	CTRL U, SHIFT G, CTRL U
8	Backspace	CTRL U, SHIFT H, CTRL U
9	Horizontal tabulation	CTRL U, SHIFT I, CTRL U
10	Line feed	CTRL U, SHIFT J, CTRL U
11	Vertical tabulation	CTRL U, SHIFT K, CTRL U
12	Form feed	CTRL U, SHIFT L, CTRL U
13	Carriage return	CTRL U, SHIFT M, CTRL U
14	Print enlarged characters	CTRL U, SHIFT N, CTRL U
15	Print condensed characters	CTRL U, SHIFT O, CTRL U
17	Select printer	CTRL U, SHIFT Q, CTRL U
18	Turn off condensed printing	CTRL U, SHIFT R, CTRL U
19	Disable printer	CTRL U, SHIFT S, CTRL U
20	Turn off enlarged printing	CTRL U, SHIFT T, CTRL U
27	Escape	CTRL U, FCTN R, CTRL U
27;48	Set line spacing 8 per inch	CTRL U, FCTN R, CTRL U, 0
27;50	Set line spacing 6 per inch	CTRL U, FCTN R, CTRL U, 2
27;51	Set line spacing n/216 per inch	CTRL U, FCTN R, CTRL U, 3,n
27;52	Turn Italic Character set on	CTRL U, FCTN R, CTRL U, 4
27;53	Turn Italic Character set off	CTRL U, FCTN R, CTRL U, 5
27;56	Disable paper-end detector	CTRL U, FCTN R, CTRL U, 8
27;57	Select paper-end detector	CTRL U, FCTN R, CTRL U, 9
27;65	Set line spacing (1/72 to 85/72 inch)	CTRL U, FCTN R, CTRL U, A,n
27;66	Set up 8 vertical tab positions	CTRL U, FCTN R, CTRL U, B
27;67	Set form length up to 127 lines	CTRL U, FCTN R, CTRL U, C,n
27;68	Set up to 12 horizontal tab positions	CTRL U, FCTN R, CTRL U, D
27;69	Turn on emphasized printing	CTRL U, FCTN R, CTRL U, E
27;70	Turn off emphasized printing	CTRL U, FCTN R, CTRL U, F
27;71	Turn on double printing	CTRL U, FCTN R, CTRL U, G
27;72	Turn off double printing	CTRL U, FCTN R, CTRL U, H
27;75	Turn on normal density graphic printing	CTRL U, FCTN R, CTRL U, K
27;76	Turn on dual density graphic printing	CTRL U, FCTN R, CTRL U, L
27;77	Turn Elite mode ON	CTRL U, FCTN R, CTRL U, M
27;78	Set skip-over perforation	CTRL U, FCTN R, CTRL U, N
27;79	Release skip-over perforations	CTRL U, FCTN R, CTRL U, O
27;80	Turn Elite mode OFF	CTRL U, FCTN R, CTRL U, P
27;81	Set a column width	CTRL U, FCTN R, CTRL U, Q
27;82	Select 1 of 8 international character sets	CTRL U, FCTN R, CTRL U, P

TI-Writer Tips and Tricks

Page numbering

Ever wanted automatic page numbering from TI-Writer but placed somewhere other than the left corner of the page? It is easy. Follow the normal commands for either a header or footer <.HE or line. Then determine where you want to place the page numbers, based on 80 columns, and use carots ({})(required space markers) between the command and the percent sign (%) used to format page numbering. It works like a charm.

(Southwest '99ers)

Windowing, etc. got you down?

Some of you do not like to use TI-Writer because of the windowing feature, and the line number, and having to type in format commands for each letter. I am here to tell you, there is an easier way! To eliminate the scrolling window, go to the Command mode and use the TAB command. Set your right hand margin to 39. Now go the Edit mode and use FCTN O to turn off the line numbers. There! Now you will be able to see everything you type without that bothersome scrolling window.

Now, on to the format commands. This pesky little problem is really very simple to eliminate. You can make a 'header file' of format commands that you often use and save them to disk in a file named 'format', or whatever you wish. For example, and I am going to use a colon instead of the period in this example, for obvious reasons.

```
:FI
:LF 6;RI 72
:IN +32
John Doe
120 Roundtree Rd
Ft Worth, Tx 70000
June 19,1985
:IN +0
Dear Sirs,
:IN +5
:IN +32
Regards, (or any closing)
John Doe
```

Now, save this to disk, and when you get ready to write a letter, just load it into the Editor. Go to the line with :IN +0, enter Insert mode, type in the name and address of the person(s) you are sending it to. Go to the line with :IN +32, enter Insert mode and type in the body of your letter. This may seem a little complicated at first, but it is really very easy to use.

(Gary Fuquay - Northeast Tarrant UG)

File too large?

To work with a DV80 file in TI-Writer that is too large to fit into the buffer, break it into smaller pieces in the following manner:

1. Load the Editor
2. Enter LF
3. Enter 1 500 DSKn.filename
4. Save to disk with its own unique name
5. Repeat steps 3 and 4 increasing the increments by 500. i.e. The 2nd time use 501 1000 DSKn.filename.
6. Repeat as necessary

(LA Topics 5.10)

Only 1 disk drive?

The main reason TI recommends a second drive is that the program files of TI-Writer take up so much room on a disk that the available space for your files is pretty limited. The recommended procedure for single drive users is to use two disks, a program disk and a file disk. First you must load the program, and then remove that disk and insert the file disk. This gets to be a lot of trouble. It is not only wasted motion, but involves storing and organizing extra disks. I choose, rather, to put copies of the NEEDED program files on the 'specialty' disks which I use often. For example, on the disks I use for correspondence and writing quick notes, I put all the

TI-Writer program files except PRACTICE, PRACTICE1, and FORMATDOC (these files only support the practice exercises in the manual and use valuable space). This allows access to both editor and formatter as well as to my own files on one disk. On most of my writing disks, however, I just put the EDITA1 and EDITA2 files. These two take up only 39 sectors together, and omitting FORMA1 and FORMA2 saved 48 sectors. With this setup, I can use the editor of TI-Writer with my files without switching disks. When I format for final printing, I then have to switch disks, but these files usually go through a lot of edits before they get a final print, so things are simplified a lot.

(Alan Eason - K-Town 1.10)

2 spaces after "." or "" will not print?

Jean Wilcox asked this question in our Basic Class: "Why does TI-Writer put two spaces after a period whether you want them or not?" Various explanations were offered but no solution. Several days later I received a newsletter from a group we have not heard from before and lo and behold not only did they give us the reason but also the solution and here it is.

Those of you who use the TI-Writer formatter may have come across situations where the formatter has put two spaces after a period when you only want one (after "ir", for example). The reason that the formatter does this is because in most situations, you will want two spaces because it is standard procedure to put two spaces after a period at the end of a sentence, but if the situation arises where you only want one space after a period, just put a required space symbol ("^", the carat = shift 6) in place of the space.

Also, if you want to print a carat in your text, you must transliterate it. This means that you must assign the ASCII value of

carat printed above was done like this. The ASCII value of 94 was assigned to 126 (tilde), so in the text file a tilde appears instead of a carat. The common command used was ".TL 126:94".

(UG of Orange County)

Use of Asterisk, etc.

More on the pestiferous asterisk bug in TI-Writer. Dr. Guy-Stefan Romano has confirmed and explained it. If you are printing out of the Formatter mode and your text contains an asterisk followed by two or more numeric digits, the asterisk and the two following digits will disappear! For example, A*256 becomes A6, and I have noticed that A6 in programs published in several newsletters recently.

The TI-Writer program misinterprets the asterisk followed by two digits as an instruction to input data from a "value file" (see Alternate Input on page 111 of the manual).

The solution to this bug is to type two asterisks followed by two dummy digits, then the actual digits. For instance, instead of A*256 type A**25256. Trouble is, the bug usually shows up in a program which has been LISTED to disk and then MERGED into TI-Writer, and is usually not noticed. The solution? Run the program through my 28-Column Converter (see Tips #16). (Another solution is to put the number first, e.g. 256*A, or put a space after the asterisk, e.g. A* 256, A * 256 etc. ED)

Dr. Romano informs me that there is an even worse bug in the Transliterate command coding, erratic and sometimes destructive. It is triggered by certain sequences of characters, but these have not been documented. Dr. Romano says that he does not use transliteration.

I would suggest that you also avoid the use of & and @. The @ will only underline a single word, unless you tie words together with the ^ sign. If you tie words together, the Fill and Adjust will leave gaping blanks in your lines and if you tie too many together the line will extend beyond the right margin! Also, the underlining is a broken line. It is better to use the escape codes CTRL U FCTN R CTRL U SHIFT - CTRL U SHIFT A CTRL U, which will give a solid underline until you turn it off with CTRL U FCTN R CTRL U SHIFT - CTRL U SHIFT @ CTRL U.

The @ is handy to emphasize a single word, but if you want to double-strike a whole sentence or paragraph it is better to use the escape code CTRL U FCTN R CTRL U SHIFT @ and turn it off again with CTRL U FCTN R CTRL U SHIFT N.

The period bug is another killer. The Formatter thinks that any line which begins with a period is a formatter command, and deletes the whole line. If your text contains a decimal value such as .11 and the wrap around puts it at the beginning of a line, the line disappears. There are two ways around this, put a 0 in front of all your decimals, as 0.11 or transliterate all your periods. (I think the period is only a problem as the first character (non space) after a CR, ED)

(Tiger Cub Tips #20)

GEMINI Special Characters

In Tips #21, I said that the special characters available on the Gemini printer could not be accessed from TI-Writer. I have since learned that Star Micronics hid a valuable feature of their printer in a paragraph of gobbledegook computerese in the manual. See "Other Function Codes", ESC ">", ESC "=", and ESC "#". In plain English, you can access these codes by CTRL U FCTN R CTRL U SHIFT >, then type the character with an ASCII 128 less than the character you want. In other words, if you want CHR\$(160), hit the space bar (ASCII 32), etc. To get back to the normal character mode, use CTRL U FCTN R CTRL U SHIFT #. Many thanks to David Aragon (San Antonio Area 99ers newsletter 8/85), who described how to do the same by transliteration.

(Tiger Cub Tips #26)

Automatic Form Feed at the end of Print

If you are printing out of TI-Writer Editor, finish your letter with CTRL U SHIFT L CTRL U and when it is printed the paper will automatically feed to the top of the next sheet.

(Tiger Cub Tips #30)

Want extra Spaces?

TI-Writer puts an extra space after every period that is followed by a space. If you do not want this extra space after abbreviations such as "Mr." or "St.", use a caret sign instead of a space after the period, Mr.^Jones. But TI-Writer puts only one space after ^ or !, so if you want two, put a caret after the symbol !^.

(Tiger Cub Tips #30)

Want 132 Characters in a Print Line?

Just prepare your file as usual but in line 0001 put formatter commands such as ".LL 10;M 132;I +5;FI;AD". The FILL and ADJUST are necessary, the INDENT is up to you, as are the left and right margins - but notice that right margin set way over at 132?

Now, instead of saving the file with SF, type PF and then C DSKn.filename to print to the disk. This not only strips out the control characters, it also erases the TI-Writer tab line that was applied to the last line of the file.

So now, with your printer opened and initialized for condensed print, go into the TI-Writer formatter mode and print your file.

(Paul A. Meadows, T.I.N.S.)

What will the Printout look like?

Use the following procedure to see what a formatted document will look like, without actually printing it:

1. Save Editor version to disk.
2. Enter Formatter and load the same file, but print to disk instead of the printer.
3. Reload the Editor and LF the disk file that was output from the formatter.
4. You can now look the file over to see what it looks like. You will see the margins, the page breaks, the .CE's will be centered, etc.
5. This will print from the Editor, if you wish using PF, but if editing is required, be careful! It is tricky.

(Dave Renkenberger - Miami County HCUG)

Recover Edit

TI-Writer is one of the most talked about programs in newsletters received from other clubs. An interesting piece of information appeared in the February issue of Call Newsletter from Atlanta. Marshall Gordon had spent a great deal of time writing some articles for his newsletter and did not save any information from time to time to his working disk. Just as he was about to save the completed first draft, there was a power glitch. The keyboard locked up, the

screen turned into a psychedelic fireworks and then went blank. What a fright! Marshall remembered reading about "Recover Edit". He knew the file was still in memory expansion but he needed to get to it. He turned the console off and waited two minutes before turning it back on. (Do not turn off the PE box!) He selected TI-Writer from the menu and then "1" for Edit. In command mode he entered "RE" then pressed Enter, typed "Y" at the prompt and pressed Enter and lo and behold his work was back on the screen again. He did need to replace only the first line of typing. He did what he should have been doing while typing, he saved the article to disk. This is great information to have. You might even experiment with it before any power surge surprises you. Knowing beforehand does keep the PANIC small sized!

(ETIS and BYTES 3/85)

Programs in DIS/VAR 80 Format

Here is an interesting tip for those with (or planning on acquiring) TI-Writer. Have you noticed those programs printed in various publications in which all characters are aligned as they would be on a monitor when typed from the console? Here is how you can do it.

With your program loaded in console and a disk ready and waiting in your diskdrive with sufficient space, type 'LIST "DSKn.filename"' and ENTER. (Suggest you use either a different disk or different filename than used with original program). Your program is now stored as a DIS/VAR 80 file which can be loaded and edited using the TI-Writer software. After editing to meet your space requirements, print it using the Formatter. (Remember, by Editing I mean for printing only, not to change the run-time action of the program. This file cannot be recovered to 'RUN' as a program)

(Rich Hubbard - Bluegrass Area Comp Soc)

(NOTE: The last statement has since been changed. Fred Hawkins of Lehigh Valley found TRANSN on CompuServe and then modified it to TRANSL80 to correct a bug.)

Print the Unprintable on TI-Writer

TI-Writer uses certain [I characters for formatting commands and will not print them if printing is done through the formatter, however there are ways around this. We will examine these characters one at a time.

The @ is used to overstrike. To print the symbol you must type two @'s to print one @.

The & is used to Underline until a blank space is encountered. The above trick will also work for the ampersand. Type two &'s to print &.

The ^ is another matter completely. Used to represent exponentiation in computer math. If a program listing is desired or a formula printed we have a problem since the ^ is utilized by TI-Writer to represent a blank space. If, for example, we wished to emphasize three separate words we could combine them as follows:

@to^emphasize^^^three words

Notice that multiple ^'s are used to reserve spaces. To print the caret we must use the Transliteration command. For example, .TL 92:94 will mean that every time a \ is used in the editor, the formatter will print it as a ^.

(Steve Citron - NEWJUG)

Full Screen Editing of BASIC and XBASIC

One can use TI-Writer or the E/A Editor to edit BASIC programs which have been obtained via telecommunications and designed to run on another computer or listed to a disk file. A simple program (which follows) is then used to convert the Display Variable 80 disk file produced by either telecommunication or by full screen editing into a Display Variable 163 file which can be "MERGED" into memory in XB. One simply removes the REH's which were automatically added to each program line by a series of alternate CONTROL X and CONTROL I keystrokes to generate a 'RUN'-able program. The program can also now be saved in the normal manner for much easier reloading. In its current form, the major limitation is that each program line in the DV80 file must be no longer than 80 characters (including line number information). The file converter follows:

```

1 CALL CLEAR :: OPEN #1:"DSK1.80-FILE" ::
  OPEN #2:"DSK1.163-FILE",VARIABLE 163
2 LINPUT #1:LS :: S=POS(LS," ",1) :: ON ERROR 6 ::
  N=VAL(SEG$(LS,1,S))
3 ON ERROR 5 :: A=INT(N/256) :: PRINT LS ::
  A$=CHR$(N-256*A)
4 PRINT #2: CHR$(A);A$;CHR$(131);SEG$(L.S.+1,80);
  CHR$(0) :: GOTO 2
5 PRINT #2:CHR$(255);CHR$(255) :: CLOSE #2 :: CLOSE #1
  :: END
6 ON ERROR 5 :: RETURN 3
      (John Hamilton - Central Iowa UG)
  
```

Printing Documentation Files

Here is a short file that you can save as **HEADER** on your TI-Writer (or TK-Writer) workdisk which will make your documentation files neater and easier to keep. Here are steps to use:

1. In Edit mode LF DSK1.HEADER
2. LF 10 DSKn.docname (will put the documents after the HEADER.)
3. SF DSKn.newname
4. Use Formatter to print 'newname'

The resulting printout will be spaced to allow three ring punching, have wider margins, and be numbered consecutively from Page 2 on.

```

HEADER
.CO file to print dv80 instructions in
.CO Elite with room to 3 hole punch
.CO codes are for Gemini 10X
.CO next line changes to Elite print
.TL 35:27,66,2
#
.CO next line sets Left Margin to 12
.TL 36:27,77,12
$
.HE
.PT. 62
  
```

Page 2

(Tom Rhodes-Bluegrass Area 7/85)

Mail Merge

Several people have asked why they cannot get the mail merge option of TI-Writer to work. I have an idea that will probably explain 99.9 percent of the problems. When you create the value file for your text file, be sure that the left margin is set at the extreme left position. If any spaces are placed in the file before the variable number, mail merge will not work. You can use either of two methods of accessing a value file. The first is to answer Y to the use 'mailing list' Option from the prompt screen. Then enter the value file name. The other is to answer Y to the prompt, then just press ENTER when prompted for the file name. In this case, you must use the ".ML filename" file management command in your text file. If you answer yes to the use mailing list prompt and then enter a value file filename, the formatter ignores any .ML command in the text file. Try it, it should work.

by Arthur Author (Airport Area CC)

40 Column Display in TI-Writer

Many times I have wondered about what TI-Writer would look like if there was only a single window to look at. If you have too, then this article is for YOU!

Let us begin by asking ourselves about how we use TI-Writer. If composing our documents on the screen is typical, then it is a distinct advantage to not have to either scroll between three screens or to have to print the document to see what we just said in the last sentence or paragraph.

Scrolling makes a 40 column screen one third the size of an 80 column screen, which we all know is not true, but it does make reading difficult. It also adds extra steps and sure does chop down a few trees in the process.

Well, there is another alternative. The secret is to set the left margin at 0 and the right margin to 39. The next requirement is that the line numbers are turned off (FCTN 0). This gives you a full 40 column screen and with the word wrap capabilities that we appreciate so much. To test the space requirements on the diskette, the following test was run.

Three files were created with the same data (all 'x's). The first had the margin set at 21 and 60, with 10 paragraphs of 6 lines (240 characters of data). The second file had the margins at 1 and 80 with 10 paragraphs of 3 lines (240 characters of data). Comparing the sectors used, the first file required 19 sectors, while the second only used 12.

This represents a 58% loss of capacity on each floppy and would raise a question about the end justifying the means. Then the light bulb came on. The only reason the margins were set to 21 and 60 was to get a full 40 column screen of data. In truth the only purpose was to eliminate the line numbers on the left of the screen.

Without considering the data storage requirements it would appear an optimal choice. Hence the third file was created using margins at 0 and 39 and with the line numbers turned off. With 10 paragraphs of 6 (240 characters), I was ready to use SD (ShowDirectory) to tell me the answer. Surprise! The sectors were not 19 or even 13. It required 12 sectors. The same as with a full line length at 80 columns. If this fact surprises you as much as it did me, you may wish to set up a different test and verify my results. In the mean time, I plan to do all of my composing on a 40 column screen, and then use the Formatter to adjust the printed page back to 80 columns.

Who said you cannot get anything for free. YOU now have a choice of 40 or 80 column mode without feeling guilty about requiring more disk space.

(George Brandt, Southwest 99ers Nov/Dec85)

10X/zero Program

This is an improvement on the slash zero for the Gemini 10X printer. It can be run in XB or BASIC. You turn on your printer then run the program and do not turn off your printer. You can shut off your computer, as it will stay in your printer until you turn it off.

```

50 REM WRITTEN BY DANE R. HEATHERINGTON
60 REM FOR SYSTEM WITHOUT 32K MEMORY
70 REM USE 110 THRU 140
100 ON BREAK NEXT :: CALL CLEAR :: CALL INT1
110 OPEN #1:"PIO"
120 PRINT #1: CHR$(27)& CHR$(42)& CHR$(48)& CHR$(0)
130 PRINT #1:CHR$(27)& CHR$(42)& CHR$(1)& CHR$(48)&
  CHR$(0)& CHR$(92)& CHR$(34)& CHR$(0)& CHR$(81)&
  CHR$(8)& CHR$(69)& CHR$(0)& CHR$(34)& CHR$(29)
140 PRINT #1:CHR$(27)& CHR$(36)& CHR$(1)
150 CLOSE #1 :: CALL PEEK(2,A,B) :: CALL
  LOAD(-31804.A,B)
  
```

Multiple Copying of Groups

When you are using the "C" command, prior to typing in your full text, then it is easy to just

1,10,10 several times to get the lines in. But when your text is all done and you want to add a separator line (for example), then you should start your copying with the last instance. Reason being for this is, you will have written down all the line numbers where you want to put the separator, but after the first copy, the line numbers have all been advanced. If you start at the last instance, then the line numbers are still the same earlier in your text.

(Paul Sparks, LA 99ers)

Documentation Clean ups

by Tom Rhodes
(Bluegrass Area 9/85)

Ever get a text file on disk as documentation that needs re-working to print out? One of the tricks I use to remove unwanted New Page commands is to use the Replace String Function of the TIW Editor. First load the documentation you are cleaning up into the text buffer and then go to command mode. Type RS for replace string and then enter a "/". Next go to Special Char mode (CTRL U) and enter (SHIFT L). (SHIFT L) is the code the Formatter recognizes to form feed. Exit Special Char mode (CTRL U again), enter "/" "space" "/" and press enter. Then the computer will prompt you for (Yes,No,All,Stop). Enter "A" for all and the computer will search your file and replace all the New Page symbols with a space. Save the file back to disk and you can print out the document without unwanted form feeds. Refer to page 86 in the TI-Writer manual for more on Replace String.

Using all 256 ASCII codes with TI-Writer

by David A. Aragon

(San Antonio Area 99ers 2.3)

I have included a short article on accessing the characters above ASCII code 127. I decided to write this article because I had a need to utilize some of the special characters on my printer (Gemini 10X) in a report I was writing. I looked through every article I could find, asked everyone I knew, and even looked in the TIW manual, but I found nothing. It took me a little while to figure it out, which is embarrassing because it is so simple, and while I am not sure how many of you have a need to access these codes, there might be a few of you who do, and maybe this will help you. Please remember that the procedure I am giving here is for the Gemini printer. Some modifications may be necessary for other printers.

If you look at the chart on page 240 of your Gemini User's manual, several things should be noted. First, by using this chart you can quickly determine the ASCII value for any particular character you need. You will notice too that all the characters available from the keyboard are used so it was impossible to use the .TL command to transliterate any of them. Now, if you look even closer you will notice that there are several codes that the printer ignores, specifically ASCII codes 1 thru 6, 16, 21 thru 26, 28, 29, and 31. Lastly, you should notice that the codes from 128 thru 159 do the same thing as the codes from 0 thru 31. This might lead you to wonder if the codes from 160 thru 255 are the same as the codes from 32 thru 127. Well, they are, almost; the difference being that above ASCII code 127 the eighth bit is 1 instead 0. You can see this by comparing the binary code for character 63 (00111111) and the binary code for character 191 (10111111) for example.

By using .TL and a few of the unused lower codes it became simply a matter of redefining that character to tell the printer what I wanted it to do. For instance, ".TL 26:32,27,62" tells the printer to print a space and then do an ESC >. This tells the printer to process all subsequent data with the eighth bit regarded as 1. On the other hand, ".TL 28:27,61,32" tells the printer to print a space after doing an ESC =, which is the opposite of ESC > in that all subsequent data is processed with the eighth bit regarded as a 0 (see page 139 of the Gemini user's guide). Now, to call them into use, press CTRL U SHIFT Z to go into the special character or graphics mode and CTRL U FCTN Z to get back out of it (see page 146 of the TI-Writer manual). What goes in between them would be the letter(s) below ASCII code 127 that you want to include in your document. The space character is not necessary for this to work, but I recommend it to make things a little easier. The character generated takes up a space on the screen but is not printed. By putting the space character (32) in the to line things up to look right. It now becomes much simpler to print formulas or even include simple graphics in your document.

Include Program Listings in Text

by Ed Kennedy

(Cin-Day 8/83)

Here is a program suggestion for routine users of TI-Writer. The next time you want to include a program listing in a letter or document perform the following operation:

1. Load the program into memory using TI-Writer. Place a carriage return character at the end of each program line.
2. Save the program to disk using the following:
LIST "DSKn.filename"
3. Include in your letter or document's main file the following:
.IF DSKn.filename

The key to this procedure is the second step. By LISTing to the disk you have saved the program in D/V 80 format which can be utilized by TI-Writer. Using this process you avoid needless typing and errors for inclusion of program listings in a letter or document.

NOTE: Fred Hawkins program TRANSL80 will reconvert D/V 80 file to program listing.

Forcing Printer Pauses

by Abdallah Clark

(Hocus)

If you want to change in the middle of your text to another printwheel or a different colored ribbon, use the ALTERNATE INPUT Command at the point in your text where you want to make the switch. When used in text without a separate file being specified for a "Mailing List" option in the Text Formatter, the ALTERNATE INPUT Command stops the printer and then leaves TI-Writer waiting for your input from the keyboard. Change your daisywheel or dot-matrix printer as needed, then press ENTER, and the printing continues to completion from that spot.

Since no harm is done by just pushing ENTER, you have an easy way of pausing, not aborting, the printout process. However, only one such change may be made per line of text unless you do some really fancy work with the TL command. Also, it seems the results will be more dependable if you put the DEFINE PROMPT command (and its CR) on a separate line. If your ALTERNATE INPUT is on a line to itself, you will have a linefeed if you press ENTER. This may be overcome by placing it where needed or substituting them for a CR symbol or reducing the ".SPn" format command by one to retain your text form.

It is also important to note that the ALTERNATE INPUT command is the only command that does not use a leading period as a signal to the Text Formatter that it is a special function symbol. This has two effects:

- (1). Do not let habit make you use a period, or you will have an unwanted period in your text.
- (2). You cannot use that combination of characters in your own document, unless indirectly by way of transliteration.

Another note to be mentioned about the ALTERNATE INPUT command is that the digit used between the asterisks may only be used once whether this pertains to a single document or a series of documents which are "linked" by the INCLUDE FILE command. Be careful not to exceed the maximum 99 for that digit in the ALTERNATE INPUT command when you have a series of documents.

You may also use the DEFINE REPORT command in conjunction with the ALTERNATE INPUT command to compose a memory jogger message for the task needed. (Remember: always give the ".DP xxxxx" first; then the particular ALTERNATE INPUT command.) This way, when the Text Formatter prints the document, the printer will stop where the alternate input group of characters are located and your prompt appears on the monitor/TV display. It is even easier than you would think if you list all the prompts at the beginning of your document, because then you may move or rearrange text to your heart's content without having to worry about whether you are keeping the prompt ahead of the input. A handy convenience if you make more than one of these printer changes in the course of one document.

TI-Writer as a Database

Atlanta Call News

M. Gordon and G. Matthews

While working with TI-Writer, I discovered that the disk controller automatically alphabetized all the files. I needed a data base that was larger than the programs available allowed. I set up a form that I wanted to use, and proceeded to fill in several records. Saving them to disk, all I had to do upon loading in TI-Writer was to ask for a Show Directory and I could see my alphabetized file, no matter what order I typed them in. No longer was I limited to a 254 byte record, it could be as large as I wished (about 22K max due to file limitations imposed by the program).

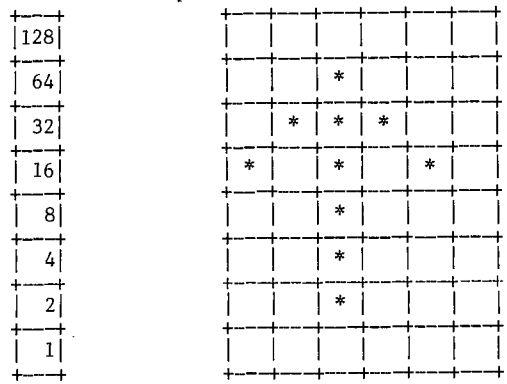
If you filed all the names in alphabetized groups, like all the A's, B's, C's together, then you could use "Find String" to locate a first name, if you did not remember the last name. Or you could use it to find a street name, zip code or anything else you wanted to locate someone by and you would not even have to sort each time you wanted to change the base of the item you were looking for.

Define your own Printer Characters by Steven Shouse, (TI-RUG 1.8)

adapted from PUG Peripheral by Norman Rakke
Have you ever wished that your printer had some special character or symbol? Well, if your printer has dot graphics capabilities and allows you to mix text and graphics on the same line, then you can use TI-Writer to create characters which you define, then print in documents that you create. Before going into detail, you should note that the information in this article relates specifically to the TI 99/4 printer; however, the control codes used are standard Epson codes and the technique should work with most Epson compatible printers. An attempt was made to verify this technique on the Star Micronics Gemini 10, but the attempt failed because the Gemini 10 will apparently not allow graphics and text to be mixed on a line.** If you have some other printer which has the above mentioned capabilities, you can still do what is described below; however, you should read your printer manual to determine how your printer does each of the things mentioned. If anything is done in a different manner, you will have to take that into account.

First of all, you must make sure that your printer is ready to receive graphics data. You may have to remove the cover from your printer and change the position of a DIP switch so that the printer can receive 8 data bits. Check your printer manual to make sure that the graphics mode works properly. Finally, if your printer is connected to the serial port of the RS232 interface, you will need to include DA=8 in your file description EVERY time you use the printer.

Printer graphics consist of one or more columns of dots. There are a total of 480 such columns across a page. Each column is 8 positions high and a dot can appear in any of the positions. Each position has a data value associated with it as shown in the figure below. The data representing a particular column is simply the sum of the data values for all the positions where a dot is to be printed.



For example, to print a column where only the top dot is printed would require a data value of 128. A column in which both the top and bottom dots were would require a data value of 128+1, or 129. A column which had all 8 dots printed would require a data value of 128+64+32+16+8+4+2+1, or 255.

Now let us create our own graphics character and see how we can incorporate it in a document prepared with TI-Writer. Let us make an arrow pointing up as our special character. The normal characters built into the printer are as wide as 6 columns of graphics (480 columns/80 chars), so let us make our character the same size. It is helpful to draw the character on graph paper, so let us do that.

The data for the columns from left to right is 16, 32, 126=(64+32+16+8+4+2), 32 and 16. (You might find it useful to know that the normal text characters of the printer do not use the column on the right (to prevent characters from running into each other) or the bottom row (except in lowercase characters with descenders). To send the graphics data to the printer, we first need to send a control code. For normal graphics mode this is in the form of ASCII codes 27;75;n1;n2. The codes n1 and n2 define the number of bytes of graphic data to be transmitted. This represents the number of columns of dots which will be printed. If N is the number of columns of graphics to be printed, then n2 is the

integer result of N/256, and n1 is N MOD 256, or the remainder of N/256. For our special character, n2 is 0 and n1 is 6. The graphics data follows immediately after n2. The complete string of ASCII values needed to print our special character is therefore 27, 65, 6, 0, 16, 32, 126, 32, 16, 0. We will create the special character by using TI-Writer TL command. We will use some character we will not be using, such as ~, and TL it to the string of data we define above.

We can now use our special character in a document. If we were writing directions for using a program where pressing the E key moved something up on the screen, we could write the following:

To move up ~ Press E

If we now print this short file using TI-Writer's Formatter, we will get the arrow in the tilde's location.

Using special characters which are six graphics columns wide allows you to still be able to use the .AD and .CE commands even if special characters are present in the text. If you are not going to use either of these commands, you can make your characters of different widths than 6.

CAUTION! Using the method described, you can design almost any character you might desire. Unfortunately, the values 8, 12, and 13 cause problems which disallow their use for graphics data using this method. You may have to modify your character to avoid these problems.

**Star Micronics printers can be used to perform similar tasks by accessing the block graphics and special character set by means of the TL command or the downloadable character set (available on some machines including the X series) may be used to design your own characters. The procedure is similar to that explained above, but there are some significant differences. See Chapter 8 in the Gemini 10X/15X Users Manual for details.

As a matter of fact, this version of the original article was printed using the Gemini 10X. The up arrow was achieved by using the TL command to print character 164 from the Gemini's block graphics and special character set. Your printer may have similar capabilities. Check your manual. One caution, the downloadable character set and special character sets cannot be used simultaneously.

For Sale

- 2 X TI99/4A Computers \$150
- Multiplan \$ 70
- TI-Writer \$ 60
- Extended BASIC \$ 60
- Terminal Emulator 2 \$ 50
- Video Chess \$ 30
- Touch Typing Tutor \$ 20
- Video Graphs \$ 10
- Hind Challengers \$ 10
- A-MAZE-ING \$ 10
- Connect Four \$ 8
- Indoor Soccer \$ 5
- Football \$ 5
- Hustle \$ 5
- Minus Mission \$ 10
- Dragon Mix \$ 10
- Alligator Addition \$ 10
- Meteor Multiplication \$ 10
- Math Game \$ 10
- Number Magic \$ 10
- Milliken Series:
- Multiplication \$ 10
- Division \$ 10
- Decimals \$ 10
- Fractions \$ 10

Ring Peter on (02)389-7025 (A/H)

Tigercub TI-Writer Experiments

Jim Petersen, Tigercub Tips #19

I have been experimenting with TI-Writer, and this issue of the Tips is being printed in 4 columns, right justified directly from the printer. Here is how -

Use TI-Writer, editor mode, in any line length you want. The first line should be .RM 27;FI;AD but do not use any other formatter codes. Do not indent paragraphs. Use some other character as a temporary substitute for any ^, @, & or * in the text. Do not include any program listings, yet.

Save the file as DSK1.TEXT. Print an edit copy. Then go into formatter mode. Select DSK1.TEXT to be printed, but instead of your printer specification, type DSK1.TEXT2. Your file will now be in 28-column format, right justified, and indented.

If the text is to include any program listings, run them through my 28-Column converter (see Tips #18), using the Editor option of that program.

Go back to TI-Writer editor and load DSK1.TEXT2. Merge in the program listings. Then PF to print file, but instead of a printer spec, type C DSK1.TEXT3. When it has printed to disk, LF the DSK1.TEXT3 and you will find that all control characters are gone.

Now for a bit of editing. Delete the 3 blank lines at the beginning, and the 6 blank lines that have appeared after every 60th line. Center the title by erasing with the space bar - do NOT use FCTN 2! Also replace any temporary characters with the ^, @, & or *.

You will print 4 columns of 60 lines per page, so the total lines in your file must be a multiple of 240. Add enough blank lines to the end of the file to reach that count.

Save that file back to disk as DSK1.TEXT3, now go into XBasic, key in this program and RUN!

```
100 OPEN #1:"DSK1.TEXT3",INPUT :: OPEN #2
:"PIO",VARIABLE 255 :: PRINT #2:CHR$(
15);CHR$(27);CHR$(69):: DIM B$(240)
110 FOR A=1 TO 2 :: FOR B=1 TO 240 :: LIN
PUT #1:B$(B)::NEXT B
120 FOR C=1 TO 60 :: PRINT #2:TAB(10);B$(
C);TAB(41);B$(C+60);TAB(72);B$(C+120);
TAB(103);B$(C+180)::NEXT C ::PRINT #2
:CHR$(27);CHR$(97);CHR$(6)::NEXT A ::
CLOSE #1 :: CLOSE #2 :: END
```

The A loop is for a 2-page printout of 480 lines, of course.

You can modify this routine to print in 2 or 3 columns, adjust the margins, change the type font size, rewrite for your own printer, etc. And the column width can be anything you want, just change that .RM 27 in the first line of the text (do not forget that the left margin is set at 0, not 1).

If you want a 2-column page, you can dump the file back to disk instead, and then print it out of TI-Writer editor. Use this routine modified as you wish.

100 !Opens a file TEXT3 of 240 lines 35 char long and converts it into a file which can be printed out of TIW Editor as 2 pages in 2 columns

```
110 OPEN #1:"DSK1.TEXT3",INPUT ::OPEN #2:
"DSK1.TEXT4",OUTPUT::DIM B$(120)
120 FOR A=1 TO 2 :: FOR B=1 TO 120 :: LIN PUT
#1:B$(B)::NEXT B
130 FOR C=1 TO 60::PRINT #2:" "&B$(C) &RPTS("
",38-LEN(B$(C))&B$(C+60)::NEXT C :: FOR D=1 TO 6
:: PRINT #2:" " :: NEXT D :: NEXT A :: CLOSE #1 ::
CLOSE #2
```

It is best to run a program to set up your printer, and printing that file out of the Editor. It is not at all easy to imbed control characters in the file, because they affect the line in all columns and also shift the lines out of alignment.

(from Tips #30)

Some of you sharp-eyed editors may have noticed that this text is being hyphenated to avoid some of those gaping blanks that occur when only a few long words will fit on a right justified line. The only way that I have found to accomplish this is to set the TI-Writer right tab for the actual column width to be printed and then, whenever a word is hyphenated, backspace and replace the blanks on that line with carets, adding enough extra carets to justify the line, like this -

whenever a word is hyphen-

It helps to go into fixed mode with CTRL O when you are inserting extra carets.

When using this method, it is also necessary to set paragraph indentation with IN O on the command line; if indentations are desired, they can be filled with caret signs, like this:

*****When using this method,

Using BASIC to set up your printer...

Here is a short program which uses FCTN 2 to set up a Gemini printer according to your wishes. It would be run before using the TI-Writer formatter or editor to print a file. You should be able to modify it to set up your own printer according to its characteristics.

```
100 OPEN #1:"PIO"
110 CALL CLEAR
120 PRINT "PRESS:": : "1 FOR EMPHASIZED": : "2 FOR DOUBLE
STRIKE": : "3 FOR DOUBLE WIDTH": : "4 FOR CONDENSED": : "5
FOR ITALICS": : "6 TO SKIP PERFORATIONS": : "7 FOR
NORMAL"
130 PRINT : "8 FOR ELITE": : "[ENTER] TO CONTINUE" :
140 CALL KEY(O,K,S)
150 IF S=0 THEN 140
160 IF K=13 THEN 430
170 IF K<49 THEN 140
180 IF K>56 THEN 140
190 IF K=49 THEN 270
200 IF K=50 THEN 290
210 IF K=51 THEN 310
220 IF K=52 THEN 330
230 IF K=53 THEN 350
240 IF K=54 THEN 370
250 IF K=55 THEN 410
260 IF K=56 THEN 390
270 PRINT #1:CHR$(27);("E")
280 GOTO 140
290 PRINT #1:CHR$(27);("G")
300 GOTO 140
310 PRINT #1:CHR$(27);("W");CHR$(1)
320 GOTO 140
330 PRINT #1:CHR$(27);("B");CHR$(3)
340 GOTO 140
350 PRINT #1:CHR$(27);("4")
360 GOTO 140
370 PRINT #1:CHR$(27);("N");CHR$(50)
380 GOTO 140
390 PRINT #1:CHR$(27);("B");CHR$(2)
400 GOTO 140
410 PRINT #1:CHR$(27);("@")
420 GOTO 110
430 PRINT "ENTER [CH] TO CHANGE PRINTER": : "FORMAT AND
PRINT FONTS": : :
440 INPUT "TEXT? ":A$
450 IF A$="CH" THEN 410
460 IF A$="ch" THEN 410
470 PRINT #1:A$:
480 GOTO 430
```

XB TI-Writer Discovery

by Gary Cox

(MICROpendium 3/86)

While experimenting with the Extended BASIC TI-Writer loader (in our library) that came from Austria (or Australia? ED), I discovered that the utility option has a feature which will allow the loading of some Assembly Language programs that previously required the E/A cartridge. Here are the steps in loading an AL program with the TI-Writer loader:

1. Select 3 on the menu (Utility).
2. Type in the device and filename for the AL program.
3. Select graphics load (number 2 on menu).

The program should now load and automatically run. However, there is one catch, this loader will only load certain AL programs. The only way to find out if it will load a particular AL program is to just try it. If an error occurs then the loader will not load it. One program I found that the utility loader would load was the new disk manager program we have in our library (not DM1000 - it loads from XB anyway). This utility option on the XB TI-Writer loader is handy if you do not have the E/A cartridge and you wish to run an AL program that will not load in XB.

Transliteration Tips

TI-Writer TL Commands

by Tom Kennedy, (Summer85)

This is a collection of TL commands that can be called from a TI-Writer file using an .IF command, and make use of the various features of your printer. More instructions in the file. (Adapted from Feb85 issue of MICROpendium)

Save the "TL" commands at the bottom of this file to your TI-Writer disk and in whatever document you are printing type ".IF DSKn.filename" as the first line. Just add the symbols described below to activate the appropriate functions. In the symbol list, "F-" means function keys and "C-" means control keys. With the CTRL U keys, you will see a strange little character that represents the hex value of the character.

To print the list of TL commands out as a guide, use the "PF" command of the Editor, precede your device name with a "C" (ex: C PIO). This removes the CR symbols after each TL command.

```
.IF DSK1.TL_FILE
.CO Includd with this file
```

```
.CO The file TI_INST has the instructions for this file
and an .IF at the end
.CO TL COMMAND RESULT SYMBOL IN TEXT
```

```
.CO =====
```

```
.TL 123:27,52
.CO Italics on      "{"
.TL 125:27,53
.CO Italics off    "}"
.TL 91:27,83,0
.CO Superscript on  "["
.TL 93:27,83,1
.CO Subscript on   "]"
.TL 124:27,84
.CO Super/Subscript off "| "
.TL 1:15
.CO Condensed on   CTRL U A
.TL 17:18
.CO Condensed off  CTRL U Q
.TL 2:27,87,1
.CO Enlarged on    CTRL U B
.TL 18:27,87,0
.CO Enlarged off   CTRL U R
.TL 3:27,77
.CO Elite on       CTRL U C
.TL 19:27,80
.CO Elite off      CTRL U S
.TL 0:27,64
.CO Initialize Printer CTRL U @
.TL 16:7
.CO Sound Bell     CTRL U P
.TL 92:8
.CO Backspace/Print "\ "
.TL 11:27,78
.CO Perforation Skip on CTRL U K
.TL 27:27,79
.CO Perforation Skip off CTRL U [
.TL 4:27,45,1
.CO Solid Underline on CTRL U D
.TL 20:27,45,0
.CO Solid Underline off CTRL U T
.TL 5:27,71
.CO Double Strike on CTRL U E
.TL 21:27,72
.CO Double Strike off CTRL U U
.TL 6:27,69
.CO Emphasized on  CTRL U F
.TL 22:27,70
.CO Emphasized off CTRL U V
```

```
.CO =====
.CO Prior to using this file, ensure the commands are
correct for your printer.
.CO Also add any commands that your printer allows that
you will use.
```

Transliteration commands

This information is adapted from the February 1985 edition of MICROpendium magazine

Save the "TL" commands at the bottom of this file to your TI-Writer disk (same disk that "FORMA1" and "FORMA2" are on) and in whatever document you are printing type ".IF DSK*.xxx" as the first line, where * is the drive number, and xxx is the filename of these "TL"'s. In the text, just add the symbols described below to activate the appropriate functions. In the symbol list, "F-" means FCTN keys and "C-" means CTRL keys. With the CTRL-U keys, you will see a strange little character that represents the HEX value of the characters.

To print the list of "TL" commands out as a guide, use the "PF" command on TI-Writer. Precede your device name with a "C" (example="C PIO"). This removes the CR symbols after each "TL" command (otherwise, you should see what you get!)

TL COMMAND	RESULT	SYMBOL IN TEXT
.TL 123:27,52	Italics/on	"{"
.TL 125:27,53	Italics/off	"}"
.TL 91:27,83,0	Superscript/on	"["
.TL 93:27,83,1	Subscript/on	"]"
.TL 124:27,84	Super-Sub/off	" "
.TL 1:15	Condensed/on	C-U + "A"
.TL 17:18	Condensed/off	C-U + "Q"
.TL 2:27,87,1	Enlarged/on	C-U + "B"
.TL 18:27,87,0	Enlarged/off	C-U + "R"
.TL 3:27,77	Elite/on	C-U + "C"
.TL 19:27,80	Elite/off	C-U + "S"
.TL 0:27,64	Initialize printer	C-U + "@"
.TL 16:7	Sound bell	C-U + "P"
.TL 92:8	Backspace/print	"\"
.TL 11:27,78	Perforation skip/on	C-U + "K"
.TL 27:27,79	Perforation skip/off	C-U + "["
.TL 4:27,45,1	Solid underline/on	C-U + "D"
.TL 20:27,45,0	Solid underline/off	C-U + "T"
.TL 5:27,71	Double-strike/on	C-U + "E"
.TL 21:27,72	Double-strike/off	C-U + "U"
.TL 6:27,69	Emphasized/on	C-U + "F"
.TL 22:27,70	Emphasized/off	C-U + "V"

Superscripts and Subscripts

by Leonard Posusta

(Metro-Jackson TI Talk 1.2)

Here is a way to use superscripts and subscripts:

- 1) .TL 91:27,83,0 to turn "ON" superscript.
- 2) .TL 91:27,83,1 to turn "ON" subscript.
- 3) .TL 93:27,72 to turn "OFF" superscript or subscript (if ordinary printing is being used).
- 4) .TL 93:27,84 to turn "OFF" superscript or subscript (if overstrike is being used).

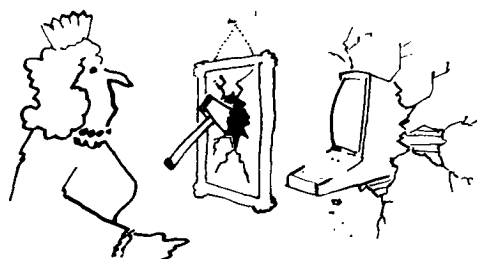
The above is for Epson and Gemini dot-matrix printers, but if you have a letter quality printer:

- 1) Use .TL 91:27,(code for neg half line-feed for superscript or code for pos half line-feed for subscript).
- 2) Use .TL 93:27,(code-pos half line-feed for superscript or code-neg half line-feed for subscript).

The meaning of the numbers is:

91 = S, 93 = H, 27 = Escape, 83(0 or 1), 72 84 = as above

Simply put the numbers or letters inside the brackets (ex: S12 H) and the number will show up as the desired superscript or subscript. I hope this will help the future authors and students.



'Computer, computer on the wall...'

Transliteration Tips

The Transliterate Command

by Bern Dehlin, (LA Topics 4.1)

Using the "transliterate" command of TI-Writer gives those with dot matrix printers the ability to change type styles, pitch, and size. The form of the transliterate command is:

".TL key:aaa,bbb,ccc,..."

Where "key" indicates to the TI-Writer FORMAT mode that it should begin using a different character set, and "aaa,bbb,ccc,..." provides the definition of the new or substitute characters.

First several characters should be chosen to serve as the "key" for the transliterate function. Usually one would choose characters not normally used in the text. The TI-99/4A console has certain ASCII characters assigned to the function key. Those on the left side of the keyboard are seldom used and are convenient to use as control characters. Suggestions are:

CHARACTER	SYMBOL	ASCII	KEY
Left bracket	[91	Fctn R
Reverse slant	\	92	Fctn Z
Right bracket]	93	Fctn T
Accent grave	`	96	Fctn C
Left brace	{	123	Fctn F
Vertical bar		124	Fctn A
Right brace	}	125	Fctn G
Tilde	~	126	Fctn W

The remaining left-hand function keys are the familiar "arrow keys" (fctn s,d,e, and x) and are used by TI-Writer for character editing.

Two "key" characters need to be determined, one to turn on the special characters and one to turn them off. For example, let the vertical bar be used for turn on and the reverse slant for turn off. Then if one wished to have the words "FOR A LIMITED TIME" printed in a different type style in the following sentence:

'This offer is FOR A LIMITED TIME only'

The control characters would be inserted as follows:

'This offer is |FOR A LIMITED TIME\ only.'

However, the control characters will not work without the transliterate command <.TL>. This command should be placed at the beginning of the text and will define both the control character <key> and the special code.

The special code <aaa,bbb,ccc,....> information is determined by the printer in use. For a Gemini-10X the various code numbers are:

TYPE STYLE	aaa,bbb,ccc,....
Standard	27,53
Italic	27,52
International	
USA	27,55,0
England	27,55,1
Germany	27,55,2
Denmark	27,52,3
France	27,52,4
Sweden	27,52,5
Italy	27,52,6
Spain	27,52,7
Pica-size type	27,66,1 (or 18)
Elite-size type	27,66,2
Condensed-size type	27,66,3 (or 15) (or 27,15)
Enlarged-size type	27,87,1 (or 14) (or 27,14)
Cancel enlarged type	27,87,0
Double strike type	27,71
Cancel Double strike	27,72
Emphasized type	27,69
Cancel emphasized	27,70
Print w/underline	27,45,1
Cancel underline	27,45,0
Superscript mode	27,83,0
Subscript mode	27,83,1
Cancel super- sub-	27,84
Initialize printer	27,64

To emphasize the word SALE in the following text on a Gemini-10X, one could use:

".TL 124:27,87,1"(both commands should
".TL 92:27,87,0" placed at left margin)

This store is having a one-day |SALE\
This store is having a one-day SALE

The first '.TL' identified | as the symbol for a type change and 27,87,1 says to use enlarged type. The second '.TL' cancels the first so that the remaining text will be in the normal type style.

Do not Hesitate to Transliterate

by Abdallah Clark, (Hocus 6)

Many members of our UG and other 99 owners with TI-Writer avoid using the Transliterate command like it was a disease or a foreign language. As thick as the TI-Writer manual is, which intimidates some, this command is certainly one subject that deserves further explanation. These tips and applications are probably not the only points to be made about transliteration, and I hope others will come about as a result of this article.

1) Contrary to several published reports, the TL command does indeed work, and works well if each instance of its use is on a separate line (with a carriage return afterward). The most common reason seen for failure of this command is the lack of the leading period, which is required for all format commands. Also, you must use commas, not spaces, when a multiple character "conversion" is needed. One user even gets it to change printer configuration (instead of the Special Character Mode, which does not seem to work), but he uses the ampersand "&" between the multiple characters needed.

2) Use the TL command to TL a character to itself if you want to cancel that conversion later in your text.

3) Be aware that any time you use the TL command to cause one character to produce a set of symbols all at one time, if you are using the Fill and Indent Mode, the Text Formatter will treat those symbols as one character! As examples, consider the sequence given on page 107 of the TI-Writer manual to print a tilde over an "n" or the case of using one character to produce a set of ellipses marks (for a partial quotation).

4) The instance described in item #3 can be used to your advantage when you have run out of positions when composing a Header or Footer, just use one "complex" TL command to specify the additional spaces or other characters needed.

5) The TL command can also be used to increase the spacing between a Header or Footer and the text and/or the end/start of the page, by using a line feed appropriately in the Header or Footer, preceded by a proper TL command. However, in this instance, do not use underline or overstrike symbols in your text.

6) Another caution to keep in mind is not to convert any of the "reserved" characters used by TI-Writer for its own special functions (the caret ^, ampersand &, or at-sign @), as well as the underline. You will not get any error message, but your results will be strange.

7) The suggestion by the TI-Writer manual at pages 106 and 127 to use two at-signs or ampersands together when you want to print one of these symbols did not seem to work. Only TL'ing did the trick. (It does work. I used it in this article. ED)

8) I have not tested this for the entire set of available characters, but it appears that the TL command will work with any valid ASCII code as its first parameter (even ASCII 0 to 31), although the second parameter should be a character your printer is capable of printing or processing.

9) It is a good idea to use the Find String command to check your document for instances where you may have used a character in the text before you use that same character in a TL.

Controlling your Printer (Atlanta Call Newsletter 3.8)

Using the Special Character Mode

The Special Character mode of the TI-Writer software is a method of sending the necessary commands to a printer in order to activate the many functions, such as different character fonts. Those who are familiar with using the Text Formatter of TI-Writer may already know of using the Transliterate command to do just this. With Special Character mode, the TL commands are not used. Instead, a number of "Special" characters, other than the normal ASCII range of 32 (space) to 127 (DEL), are generated and sent to the printer upon printout with either the PF command or the Text Formatter.

We have all seen the symbol that represents a Carriage Return installed at the end of a sentence or paragraph in our document, this is one of those "Sp-Ch"s. The ASCII value of a Carriage Return is 13, and to send a CR to a printer you must send character number 13 (not the value 13).

To activate the Special Character mode, you hit a CTRL U, and the cursor symbol changes to an underline character. A second CTRL U puts you back to normal mode.

To install a Sp-Ch in your document, you must first know what function of your printer you wish to invoke. Most printer manuals have a chart that lists the various functions and the codes needed to activate them, and it is very handy to have a copy of this list nearby when formatting a document. For instance, the sequence ESCape E (ASCII value 27 and 69) will invoke emphasized print on Epson printers, and if we send an ASCII value of 27, then an ASCII value of 69, the printer switches to emphasized print. We know that ASCII 69 is a capital E, but ASCII 27 (ESCape) is not a "typeable" character. Now we go to the list of Special Characters on page 146 of the TI-Writer manual, and we see that ASCII 27 can be generated by typing the FCTN R while in SpCh mode. The symbols generated by each SpCh are also listed, and almost all are the Hex value of the ASCII code, compressed down to take up the space of only one character. ASCII 27 is HEX 1B and you will see a little "lb". Right after the "ESC" character, you type the "E" for ASCII 69. In summary, the sequence to send the control characters for Emphasized print would be:

CTRL U FCTN R E CTRL U

These SpCh can be installed anywhere in the text, as they do not print upon output, just as the "re-defined" characters used with the Transliterate command are "invisible".

There are pluses and minuses to using the SpCh mode against using the Transliterate command. The TL commands are more versatile, and can easily be made to send a complicated sequence of ASCII values, where using SpCh mode would get quite tedious each time a lengthy code was sent. Also, a number of TL commands can be stored in a separate file, and linked to the document upon printing, thus saving having to re-write them each time. On the other hand, when a relatively short code sequence is needed, SpCh is much simpler, and the biggest advantage is that you need not load and run the Text Formatter, which can be a major obstacle to many.

As an example, when I want to just write a little note, and I want it in emphasized, I can simply start with a CTRL U FCTN R E CTRL U and when I use the PF command, I have a nice dark print. Another widely used area is when reformatting paragraphs, such as when modifying margins, and you need to install a CR symbol at the end. One way is to move the cursor to the point where you need the symbol, hit CTRL 8 (New Paragraph) and then edit out the extra line and spaces. A much simpler way is to just locate the cursor and hit CTRL U M CTRL U, which will generate a CR symbol.

(NOTE: Both Transliterate and Special Character modes may be used in the same document.)

TRANSLITERATE CODE	FUNCTION	SPECIAL CHAR.MODE
0	Terminate Tabs	CTRL U SHIFT 2 CTRL U
7	Sound buzzer	CTRL U SHIFT G CTRL U
8	Backspace	CTRL U SHIFT H CTRL U
9	Horizontal Tabs	CTRL U SHIFT I CTRL U
10	Line Feed	CTRL U SHIFT J CTRL U
11	Vertical Tabs	CTRL U SHIFT K CTRL U
12	Form Feed	CTRL U SHIFT L CTRL U
13	Carriage Return	CTRL U SHIFT M CTRL U
14	Enlarged type	CTRL U SHIFT N CTRL U
15	Condensed type	CTRL U SHIFT O CTRL U
17	Select Printer	CTRL U SHIFT Q CTRL U
18	Cancel Condensed	CTRL U SHIFT R CTRL U
19	Disable Printer	CTRL U SHIFT S CTRL U
20	Cancel Enlarged	CTRL U SHIFT Y CTRL U
27	Escape	CTRL U FCTN R CTRL U
Line Spacing		
27;48	8 Per Inch	CTRL U FCTN R CTRL U O
27;49	7/72	" " " 1
27;50	6 (Normal)	" " " 2
27;51	n/216	" " " 3,n
27;65	n/72	" " " A,n
27;52	Italic	" " " 4
27;53	Cancel Italic	" " " 5
27;56	Disable Paper-end Det.	" " " 8
27;57	Enable " " "	" " " 9
27;66	Set 8 Vert. Tabs	" " " B,n1,n2,etc.
27;67	Form Length n to 127	" " " C,n
27;68	Set 12 Horiz. Tabs	" " " D,n1,n2,etc.
27;69	Emphasized	" " " E
27;70	Cancel Emphasized	" " " F
27;71	Double Strike	" " " G
27;72	Cancel Double Strike	" " " H
27;75	Single Density Graphic	" " " K
27;76	Double " "	" " " L
27;77	Elite	" " " M
27;78	Skip Over Perforation	" " " N
27;79	Cancel Skip Over Perf.	" " " O
27;80	Cancel Elite	" " " P
27;81	Set Right Margin at n	" " " Q,n
27;82	Select n Int'l Charset	" " " R,n

Your TI-Writer word processor has two ways to output codes to your printer. The above codes work for Epson compatible printers. The following is an explanation of how to use these codes.

TRANSLITERATE CODES:

These codes can only be used when you print your file through the Formatter of TI-Writer. The main purpose of these codes are if you want to have specific print changes within your text. For example, if I wanted to have a line of text to be printed in Italics, I would do the following:

On a separate line I would enter '.TL 94;27;52'

The 94 is the ASCII codes for the circumflex symbol (SHIFT 6). This tells the Formatter that whenever it runs into the symbol to output the Italics code (27;52) to the printer. To turn off the Italic mode, we would enter '.TL 126;27;53'

The 126 is the ASCII code for the Tilde symbol (FCTN W). When the formatter sees this symbol, it outputs the Italic Off code to your printer and returns to normal Pica type. The line of text would look like this on your screen: ^Printer set for Italics. Each Transliteration must be on a line by itself followed by a carriage return. It is best to have your codes at the beginning of your file. Or a separate file can be created and then used with the .IF (Include File) command at the start of your text file.

SPECIAL CHARACTER MODE:

This mode can be used in either the Editor or Formatter. Its purpose is to send a Permanent printer control code to your printer. To enter these codes into a text file, you would enter whatever codes are desired on a separate line within the file. All of your codes may be entered onto the same line ending with a carriage return. Just as with the Transliterate codes, you can have a separate file set up for whatever codes you require. You can also combine transliterate codes with Special Character Codes. The transliterations still must be on a line by themselves.

A Second Look at TI-Writer and Printer

Character Sets

by Harvey E. Rich, (LA Topics 4.1)

Most printers have built in software control codes which allow for printer control through the computer. Those of you who use TI-Writer and wish to have control of your printer while working with TI-Writer have two means of doing so:

1. Turn on and set the printer via TI BASIC. Then quit BASIC and return to TI-Writer. The printer will be set for whatever character font or set for which you have issued a command.
2. Use the transliterate command which is built into TI-Writer.

Method 1 was described in an article in the November issue of Topics. This approach has two drawbacks. The first is the inconvenience of having to leave TI-Writer, enter TI BASIC to set the printer, and then return to TI-Writer. The second is that once the printer is set for a given command, that setting must remain in effect for the entire time the TI-Writer formatter program is running and the printer is turned on. If you desire to cancel or change your printer setting you must reset the printer. This makes it extremely difficult, if not impossible, to have several print types in the same printed copy.

Method 2, however, is simple, elegant, and powerful. Most importantly, it can allow you to utilize the printer commands directly through TI-Writer. You can turn on one or more commands during a run or turn them off singly or together as you desire. This method works beautifully with my TI impact printer and should work just as well with other printers. The information for using this command is on pages 107, 120, and 144 of the TI-Writer manual. However, be forewarned that the information is on the skimpy side.

The transliterate command assigns one or more ASCII character values to another ASCII character value. In this manner commands are sent to the printer, which will become activated since it is set to respond to certain ASCII character codes.

Suppose you wished to print in emphasized style. On the TI impact printer, the ASCII characters which activate this mode are designated by CHR\$(27);CHR\$(69). In TI-Writer the format command to do this would be '.TL 35:27,69' (35 = #). Thus, every time the ASCII character # was encountered as an embedded command in the program, the program would assign it the value CHR\$(27);CHR\$(69) and turn on emphasized characters on your printer. Using this mode you will get a print quality which is much closer to letter quality. If you wished to deactivate the emphasized mode for a portion of your manuscript, you simply type '.TL 37:27,70' (37 = %) and insert a % symbol as an embedded command in a separate line of the text. This is the command for cancelling emphasized print. I should add at this point that 35 and 37, which are the ASCII character codes representing the # and % respectively, are arbitrary. Any ASCII characters can be used in the transliterate command.

Let me give another example. Suppose you wished to put a heading on your manuscript in enlarged letters with emphasized print. After this you wanted to cancel the enlarged mode but remain in emphasized print, as outlined above. Next type the following: '.TL 43:27,14'

Now, at the beginning of the line that you want enlarged, type * (42 = *). This will activate enlarged mode but only for that line (that is the way it works on the TI impact printer). You will not need to type the commands to cancel the enlarged mode since it will only be activated for the specific lines for which enlarged characters are printed, the printer remains in emphasized mode.

As you can see one can access any or all the printer command codes using this system and not have to worry about turning off the printer and losing the printer command set because the printer is automatically set to the proper mode during the running of the TI-Writer formatter program.

Letter Head Design

by Ken Burdges

Atlanta Call Newsletter Sept/Oct 85

This is a demonstration of a letterhead designed by bit graphics for the Gemini 10X printer. The entire letterhead is programmed for TI-Writer using the Transliterate command and various printer commands. My experience indicates that a TL command cannot be longer than one line. This appears to be the only limitation of the program. Your patience will get a real work out in building something like this letterhead, but it is a unique capability allowing personalized communication.

The following file was used to build the letterhead:

```
.IF DSK1.LETTERHEAD
.CO Draft file commands, elite,
.CO dbl space, 1 1/2 and 1 in margin
.TL 91:27,45,1
.TL 93:27,45,0
.TL 60:27,66,3
.TL 62:18
.TL 123:27,52
.TL 125:27,53
.TL 126:27,66,2
.TL 47:27,85,0
.CO Elite 12 cpi, [Underline], [Italic]
.CO <Condensed>
.CO Personal Logo in bit graphics
.TL 33:27,49,13
.TL 34:27,85,1
.TL 35:27,14
.CO ! Line feed and carriage return, " for
    unidirectional, # for enlarged
.TL 49:27,75,15,0,0,6,30,48,96,64,128,192,224,254,
    254,126,126,58,0
" !
.TL 49:27,75,15,0,0,0,6,2,0,128,192,96,96,112,112,
    240,224,224
.TL 50:27,75,5,0,226,192,128,0,0
" 12 {#NOVATIVE}!
.TL 49:27,75,15,0,0,14,124,240,192,192,70,126,126,120,
    112,96,192,0
" !
.TL 49:27,75,15,0,0,0,6,30,240,192,0,0,6,30,254,240,
    224,128
" 1
    {ENGINEERING CO.}!
.TL 49:27,75,15,0,0,0,126,254,0,6,30,126,254,192,0,0,
    0,0,0
.TL 50:27,75,15,0,0,2,2,2,2,2,2,2,2,6,6,6,6,6,6
.TL 51:27,75,15,0,6,14,14,14,14,14,14,12,28,28,28,28,24,
    24,56,56
.TL 52:27,75,17,0,56,48,48,48,48,112,112,112,112,96,
    96,96,96,96,64,64
.TL 53:27,75,6,0,192,192,192,192,128,128
.TL 54:27,75,5,0,128,128,128,128,128
" 12345!
.TL 49:27,75,15,0,0,0,128,224,96,248,248,248,248,248,
    248,248,240,240,240
.TL 50:27,75,15,0,240,240,224,224,224,192,192,192,
    192,128,128,128,128,128
" 12!
.TL 49:27,50
.TL 50:27,85,0
12
.CO Put numbers back to original form
.TL 49:49
.TL 50:50
.TL 51:51
.TL 52:52
.TL 53:53
.TL 54:54
.CO Begin text control
.LM 0;RM 70;FI;IN +5
```

I must also apologise to Stephen Judd, one half of the GAMES team, for referring to him as Stephen Judge. Sorry Stephen, I cannot think how that happened!

At the meeting I received some comments about the issue, all of them complimentary, except for one comment that the size of the type is too small. I think everyone who made a comment to me, as that is what I want to happen. At least it tells me that all our work is being read and (in this case) was sufficiently good or different to deserve a comment. If you want to say that something is not good, do please go ahead. We can only get better if we get told where we are going wrong. By the way, the information about when the next meeting in Sydney will be held is on page 1, at the bottom left hand corner. I mention that because it tells you that the April meeting will be one week later than usual because of Easter. Please do not feel that the only way to make a comment is in person. A letter would be very welcome.

I received two letters from the BBS, one from Shane with congratulations on the issue and the other from Ross Mudie with similar sentiments. A big thank you to both those worthy gentlemen.

The problem of the small print is more difficult to address. We currently paste up on A3 sheets which have the border already printed. These sheets are then reduced to A4 to make the printing plates which is a reduction of 0.71. However, on measuring the actual dimensions of the originals and the final version, I notice that the actual reduction is closer to 0.66. I shall have to ask the printery if they can raise that a little. My goodwill there has been a little strained recently so I cannot promise too much. At least I can ask a few questions. The reason for reducing, is to allow us to get the information printed for the least cost. Perhaps we should try one issue with no reduction to see what you think is best. Of course the best time to do this would be when we are having trouble finding enough information to print a reasonable size magazine.

The other solution we are working on is to produce the TND on a laser printer using desktop publishing software on a Macintosh. This should give larger print in the same space with proportional spacing. The headings are produced this way at the moment. We are waiting on the Directors to provide the necessary hardware to make this a reasonable thing to do in the time available each month.

At the meeting I had a chance to look at the new real time clock in operation. John Paine showed me several programs where the time was on the screen while other activities carried on as usual. This is done with the VDP interrupt, and we are reprinting an article on interrupts in this issue. Another program showed the day, date and time as a display while a third had the time showing down to 1/100 second. The least significant digit was changing too quickly to read, but it showed how fast things can be done. From these programs it should be possible for people with their own clocks, to write programs for their own applications. Please send in any that you do construct and I will publish them for others to try also. John also had a RAMcard with 1Mbyte of memory on it. He has a few problems to iron out yet, but knowing John, it should be working soon. Peter Schubert gave me a disk of his latest software for his disk controller. There are a few new files which I shall have to try out. One I have used is the new version of Disk Utilities (V4.0a) by John Birdwell. It looks like a big improvement on the one I had, which was pretty good. Unfortunately there are still problems in using the programs from the menu if you only have a single sided drive with the double sided disk. Even though all the programs are on the first side, only DM1000 and PRbase load and work. Perhaps it is the presence of the document files between the others in the alphabetical order which causes the problems. In fact there appears to be a further problem, in that I have had tracks rendered non readable (not formatted), while working. I assume that I was initializing a disk in the other drive and somehow one track was cleared in the second drive. It has happened with DM1000 and the CorComp manager. Perhaps the faster buffer chip would solve the problem.

My latest "goodie" is a RAMdisk, courtesy of Lou Amadio. Lou did all the soldering for me and when we powered it up it worked perfectly first time. I could only afford a SSSD version, so I have put on it the files I am using all the time, like DM1000 and the TI-Writer editor and formatter. I have put them all on the menu program as well as a link to the AT system on disk. It saves quite a bit of time when going from the editor to the formatter and back. The next step is to build another one using the 32K chips and go for 384K of memory. The nice thing about the 32K chips is that they will only occupy one layer to that size and so can be added slowly as funds permit. It would be quick to have the file I was editing on a RAMdisk as well. One point about the 32K RAM chips is that they need a pull up resistor from their chip select pin (20) to the battery line to ensure that they power down when the +5 volts goes to 0.

Now let us take a quick look at the magazines from around the world. First there is the February 1988 issue of Bytemonger, from the Bluegrass 99 Computer Society of Lexington Kentucky. Apart from some articles reprinted from elsewhere, there is an interesting article on hardware, which obtains its information from the book "A Hardware Manual for the TI99/4A" which can be obtained from The Bunday Group, P.O. Box 53171, Lubbock, Texas 79453 for \$19.95.

The Northern NJ 99ers User group, February 1988 magazine has an article on the Disk Information Manager. This sounds like Disk Utilities. It has one unusual feature in that it can dump a whole disk of files to cassette. It comes from the Boston Computer Society. Attached to the back of this magazine is the January 1988 issue of Bytes, Bytes & Pixels from the Lima 99/4A users group. This has an article on expanding your expansion system cheaply. I think the ideas are good and we have the suppliers right here in TISHUG to allow you to follow this plan.

The February 1988 issue of the Tacoma Informer contains articles about the Geneve and about TI-Writer.

The February 1988 issue of the Ottawa group has some questions and answers about Multiplan, some discussion about a problem with EVEN in assembler, and two tutorials on BASIC. There is also some discussion on the Geneve.

I received 3 issues of Clubline from the Channel 99 users group in Hamilton, Ontario. It looks like they have been going through a bit of a crisis, with the departure of Malcolm Johnson as editor. The November 1987 issue has an article about Funnelwriter V4.0, and a tutorial on TI-Writer amongst other things. The interest in TI-Writer continues in January and February, as does a series of articles on learning LOGO. In January there is a review of Boardmaker for making or editing screens for TI Runner. In February there are also articles on the menu program for the Horizon RAMdisk, disassembling programs, archiving programs, the Geneve, saving large programs to cassette and interlacing on disks. Iain Johnson has also been going through a game he wrote over these three issues.

The Jan/Feb issue of Bug Bytes from Brisbane has an article on the modulator which may help those who wish to know more about this side of the computer. Col Christensen also talks about the repair of consoles. It sounds like he could do with one of my console testers to save him some time. Hmm.

The February Hunter Valley 99'ers News contains an interesting article by Tony McGovern on his latest version of Funnelweb system. Bob Carmony talks about the latest archiver programs and Larry Reid talks about lots of new products, both software and hardware. He mentions a program to convert text files from a TI to a MS-DOS disk. There is a review of PRbase, a page of function strips, BASIC tutorial and a look at sorting amongst the rest.

The November 1987 Tit Bits from W.A. contains an article by Bernie Elsner about accessing all sectors on a disk from BASIC. There is also an article on TI-DOS and a list of cassette and books held in their library.

MICROpendium of January 1988 has its usual articles on BASIC, c99 and the Geneve. It also has an article on archiving, with discussion on the merits of a standard format. There is an article on LOGO and the usual software reviews.

continued on page 31

Regional

Group

Reports

Meeting summary.

Carlingford	20/4/88	???
Central Coast	16/4/88	Toukley
Glebe	14/4/88	Glebe
Illawarra	14/4/88	Keiraville
Liverpool	8/4/88	Merrylands
Sutherland	15/4/88	???

TISHUG in Sydney

Regular meetings are normally at 2pm on the first Saturday the month, except January, at the Woodstock Community Centre, Church Street, Burwood.

The April meeting is on the second Saturday, 9th April, because of Easter.

BANANA COAST Regional Group (Coffs Harbour area)

For information on meetings of the Banana Coast group, contact Keir Wells at 9 Tamarine Drive Bellingen, telephone (066) 55 1487.

BANANA COAST Regional Report

Our last meeting was held at John Ryan's home in Mullaway, north of Coffs Harbour. Unfortunately all our members could not attend, there being 8 members at the meeting. The group has grown so quickly that it is hoped that from the next meeting, we should have a permanent address at the local Tennis Club House. We meet on the second Sunday of the month at 2pm.

Highlight of the afternoon was using the new disc copier on the Mini PE disk, most members being amazed at the speed of the copier. It is hoped that a BASIC class can be started at the next meeting, as a lot of members are not fully conversant with the BASIC language. With a couple of new members with only the basic system, the more experienced members should be able to assist them.

A personal thanks from myself to Ross Mudie for the assistance he has given me on a file saving problem, something that was not covered in the manual. This could be the basis for a tutorial by one of the experts in BASIC to write in the magazine.

With our membership of 15 we can see a bright future for our orphan. Hoping to see you at the TI Faire in Brisbane.

It was great to meet Cyril Bohlsen on his annual holidays in our area.

Kevin Cox.

CARLINGFORD Regional Group

Regular meetings are usually on the third Wednesday of each month at 7.30pm.

Contact Chris Buttner, 79 Jenkins Rd, Carlingford, (02) 871 7753, for more information.

CENTRAL COAST Regional Group.

Meetings are normally held on the second Saturday of each month (not April) at 6.30pm at

Toukley Tennis Club hall,

Header St, Toukley.

Contact Russell Welham (043) 92 4000

GLEBE Regional Group

Regular meetings are normally on the Thursday evening following the first Saturday of the month, at 8pm at 43 Boyce St, Glebe. Contact Mike Slattery, (02) 692 0559.

The activities at these regional meetings are rather informal and include looking at new hardware, hardware repairs, looking at new software and having a general chat.

ILLAWARRA Regional Group.

Regular meetings are normally on the third Monday of each month, except January, at 7.30pm, Keiraville Public School, Gipps Rd, Keiraville opposite the Keiraville shopping centre.

Contact Bob Montgomery on (042) 28 6461 for more information.

LIVERPOOL Regional Group

Regular meeting date is the Friday following the TISHUG Sydney meeting at 7.30pm.

Contact Larry Saunders (02) 644 7377 for more information.

At last month's meeting the main program was Writerease word processor program. It was well liked by all present.

Meetings coming up.

1. April 8th 1988, at ROSS HARDY's house, 15 Excelsior St., Merrylands, Phone 6376772
2. May 13th 1988, at STAN MACPUCKLE's house, 15 Richmond Crescent, Campbelltown, Phone (046)256157
3. June 17th 1988, at HANS ZECEVIC's house, 33 Malinya Crescent, Moorebank, phone 6008716

Note, if you find it hard to get me at home due to the hours that I work, I will put on the BBS my work phone number when I find out what it is.

NORTHERN SUBURBS Regional Group

Regular meetings are on the third or fourth Thursday of each month.

Contact Dennis Norman on (02) 451 3920 or Dick Warburton on (02) 918 8132 for further information.

SUTHERLAND Regional Group.

Meetings are held on the third Friday of each month.

Group co-ordinator is Peter Young, telephone (02) 520 8775.

BBS Contact is Gary Wilson, user name NK2YCW on this BBS.

continued from page 30

I include the following from the BBS.

PROPOSED BBS UPGRADE.

As SYSOP I would like to upgrade the BBS disc controller to double density. This will allow more programs, news and User Uploaded programs to be on the BBS. I have asked the Directors of TISHUG to purchase a Peter Schubert DSDD disk controller for the BBS and one for my system to allow disks to be prepared for the BBS off line. The Directors have decided to wait and see how many members renew their TISHUG membership this year before approving the purchase. This is where YOU can help. Please renew your TISHUG membership as soon as possible to indicate your support for this proposal. Annual membership fees are \$25 + \$5 for BBS + \$5 for Publications Library. Do not forget to advise BBS and/or Library when you renew. Please send your renewal to TISHUG, PO Box 214, REDFERN, NSW, 2016., As soon as possible. Ross Mudie, SYSOP, 9th March 1988.

I find the directors' attitude very difficult to understand. The magazine relies enormously on the BBS to get the information each month. The directors need some feedback from all of us as members, about whether they should spend our money on things such as this. It would make my life much easier also if I could have a second disk controller and DSDD drive. Please let the directors know your opinion, what ever it is, on this matter.

We are printing this month a large number of articles on TI-Writer. These were collected from all over and most are relatively old. However we hope that by putting them all together in one issue you will be able to refer to this issue when in doubt about anything.

The other big event coming up, which we have featured on the front page, is the TI Faire or TI-99/4A Expo, on the 21st May. Garry Christensen and his crew are to be congratulated on organising such an event, and in attracting the interest of Myarc and Rave 99 who will be showing their wares. We should have someone there who can report on the event for the June TND. Any volunteers? Would such a person receive help with expenses? Ask The directors.