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**ISHUG**

**NEWS  
DIGEST**

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Focusing on the TI99/4A Home Computer

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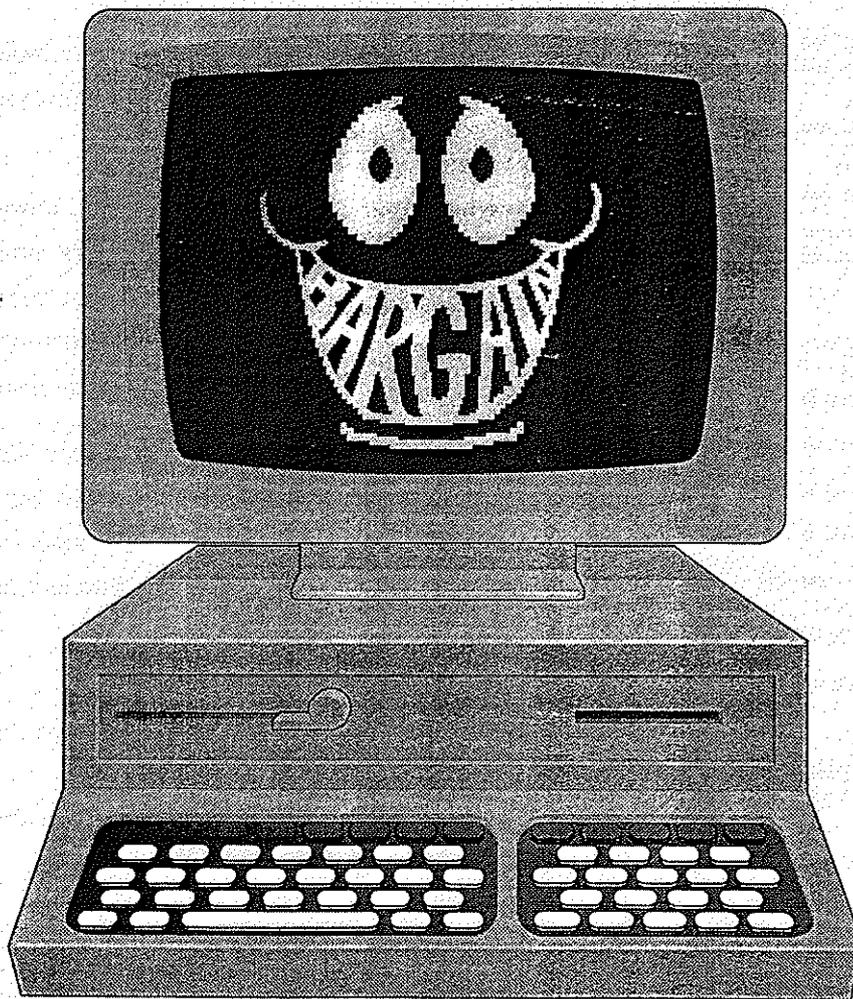
Volume 13, Number 2

March, 1994

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pic.  
ROBERT BROWN

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Sydney, New South Wales, Australia

\$3

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TiSHUG (Australia) Ltd.  
A.C.N. 003 374 383

## TiSHUG News Digest

All correspondence to:  
C/o 3 Storey St.  
Ryde 2112 Australia

### The Board

Co-ordinator  
Dick Warburton (02) 918 8132  
Secretary  
Robert Relyea (048) 57 1253  
Treasurer  
Cyril Bohlsen (02) 639 6847  
Directors  
Percy Harrison (02) 808 3181  
Thomas Marshall (02) 671 7535

### Sub-committees

News Digest Editor  
Loren West (047) 21 3739  
BBS Sysop  
Ross Mudie (02) 456 2122  
BBS telephone number (02) 456 4606  
Merchandising  
Percy Harrison (02) 808 3181  
Software Library  
Larry Saunders (02) 644 7377  
Technical Co-ordinator  
Geoff Trott (042) 29 6629

### Regional Group Contacts

Central Coast  
Russell Welham (043) 92 4000  
Glebe  
Mike Slattery (02) 682 8162  
Hunter Valley  
Geoff Phillips (049) 42 8176  
Illawarra  
Geoff Trott (042) 29 6629  
Liverpool  
Larry Saunders (02) 644 7377  
Northern Suburbs  
Dennis Norman (02) 452 3920  
Sutherland  
Peter Young (02) 528 8775

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Annual Family Dues \$35.00  
Associate membership \$10.00  
Overseas Airmail Dues A\$85.00  
Overseas Surface Dues A\$50.00

### TiSHUG Sydney Meeting

The February Meeting will start at  
2.0 pm on the 5th March 1994  
at Meadowbank Primary School,  
Thistle Street, Meadowbank.

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## TiSHUG News Digest

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## I B M I N D E X

### IN MEMORIAM

It is with great sadness that we have to  
announce the death of JIM PETERSON, who passed  
away on the 14th January 1994.

Jim a member of TIGER CUB SOFTWARE was a long  
standing member of the T.I. community and had  
contributed many programmes and articles to many  
T.I. magazines.

The committee and members of TiSHUG wish to  
pass on their condolences to his wife and family  
on their great loss.

## CO-ORDINATOR'S REPORT

Last week I looked at the fantastic advances made with the use of computers in our society over the past 15 years. I highlighted the way in which computers are being applied to almost every aspect of our lives in the modern world, and suggested that computers can become like a two edged sword, ie they have a dark side as well. Computers can also be used to control people, to manipulate financial systems, and perhaps most importantly we can become so dependent on them that we lose our independence. It was interesting during the last month, to observe that Bill Gates, the founder and owner of Microsoft, and also one of the richest people in the world, visited Australia and talked with Mr. Keating. He talked publically about an "information superhighway" and its inevitability. My understanding is, it was suggested to Australia, that we gear up ready to join the modern world, by adopting the necessary technological changes in our telecommunications systems. I suspect that changing to digital technology and optical fibres are part of this process.

This "information superhighway", will enable almost all financial transactions to be carried out electronically, and monitored and recorded. It will link people to massive data bases, and provide information on almost any topic, including instant information on people. What a boon for Govt. agencies, the police, the tax Dept. and credit agencies, let alone all the advertisers who like to know what consumers are buying. Today in the Sydney Morning Herald, I saw an add for Telecom, offering the complete Australian phonebook on a CD ROM disk for 60 dollars. The important point is, that computers can list phone numbers in reverse, ie. look up peoples' names from the phone number. I suspect that it will be a big seller. The application of new technology will make deep inroads into our privacy.

These computer developments will revolutionize our education system in time. Already some children spend a significant period of time in front of their computer at school, working on their own. For many of them it follows long periods spent on the "Nintendo" at home. Recently I asked an 8 yr old what sport he played. He told me earnestly that he played a great number of sports after school. He listed cricket, soccer, baseball, basketball etc. I was surprised because he gave no impression of enjoying sport. Then he added, "on the nintendo". He was almost unaware that sport can be experienced physically. His world is basically revealed to him through his game's machine. He hardly goes out, has no friends, and is addicted to computer games. I suspect that an increasing number of children will find their reality in their computer. Maybe in time, children will not need to go school at all. They could simply sit in front of their computers all day and communicate by modem. I'm sure that the Govt. would appreciate the savings in having no schools. I suppose parents might have some reservations about having their monsters at home all the time. Fantasy? I don't think so. The cost of setting up such a scheme would seem to me to be less than the cost of educating a child for a single year.

There is no doubt in my mind that we will continue to see the most remarkable changes in our society, as

computers are applied to an ever increasing number of fields. Already it is evident that the nature of employment has changed drastically over the past decade. Employment is no longer permanent. We can expect to change our work at least 5 times in a lifetime. Permanent work is being replaced by casual work. Entertainment will change. Virtual reality has enormous implications in this area. Even now, this week, there is concern that computer games available now to children, must be censored. The incidence of mindless violence, or sexual aggression in computer games is increasing. The "porno industry", has discovered computers and bulletin boards. Bulletin boards now carry remarkable information. I read recently that stolen credit card information is available on some boards. On another board, information about making bombs was freely available. It is clear that computer technology can be used to great advantage, or conversely can be used to create great social harm. It seems to me that the ongoing computer revolution, will have a far greater impact than the "industrial revolution" of the 18th century.

We can play our part by being better educated about the emerging technology. We must move with the change. We have no alternative. However we must be careful to help implement social applications which benefit our society, not destroy it. I see our club as having an important role in helping individual members to adapt to the changes, and to also help in some small way to help shape the directions we take. It is an exciting time. 1994 will bring new developments and new challenges. I hope to be able to bring them to our members.

See you at the next meeting

Dick Warburton.

END OF ARTICLE

TIM FIX

from Andrew Webster  
(Courtesy Lehigh 99'er Computer Group)  
Re-typed by Bob Relyea

EDITOR'S NOTE: This might come in handy someday!!! For those of you who operate T.I.M. (OPA's 80 Column device) and have been having trouble with sync on the new Commodore 1084 monitors (the specs have been changed to TTL levels) here is what to do about it, directly from OPA. In the D-25 male plug that connects to TIM put a 4.7k ohm resistor across pin 1 (+5v) and pin 11 (composite sync output) or pin 14 (+5v) and 11. That increases the sync amplitude to the proper level. Note: My own 1084 needed a 4.0k ohm resistor. If anyone out there has a Multi sync monitor that can scan down to 15.75 Hz and can operate analog RGB, the TIM sure looks nice on it!

END OF ARTICLE



**TISHUG SHOP**

with Percy Harrison

The February meeting saw both the TI Users and IBM Comptable Users located in the same area and judging by the comments I heard went to everyones liking so in future we will continue to keep the two groups together.

At the March meeting we plan to sell off a major part of our surplus stock at extremely low prices so bring your money with you as it may be your last chance to pick up some of those items that you have been searching for.

While I think of it the April meeting, listed for the 2nd April in the calendar in the Jan/Feb TND will be held on the following Saturday 9th April as the 2nd is a four day weekend and the Directors felt that a number of our members might be away on that weekend, so please make a note in your diary so that you don't turn up on the 2nd and find the meeting rooms locked.

During the fire crisis I received a card from Pierre Garoche, our one and only member from France who always shows a keen interest in our club and so I thought that I would include Pierre's short note in this issue of the TND as it was to all our local members.

"I was deeply stirred when I heard of the burning surrounding Sydney. I think about TISHUG members and their family.  
Regards to all."

Pierre Garoche.

Many thanks for your kind thoughts Pierre, I am sure that they are well appreciated by all who were worried by the bush fires which almost surrounded Sydney on three sides, north, south and west. Fortunately we have not had any reports of any of our members actually suffering losses due to these terrible fires.

Finally, I would like to thank both John Obrien and Lou Newhouse for their kind donations of modules and books to the club shop. Again, this gesture is much appreciated.

**CLUB SOFTWARE DISKS.**

G001	Module Games #1 SSSD	.....\$2
G002	Module Games #2 SSSD	.....\$2
U003	Utilities Disk #1 SSSD	.....\$2
PP004	Page Pro Pics #1 SSSD	.....\$2
AT005	TI Artist Pics #1 SSSD	.....\$2
G006	Module Games #3 SSSD	.....\$2
G007	Module Games #4 SSSD	.....\$2
G008	Games #5 SSSD	.....\$2
G009	Games #6 SSSD	.....\$2
AV010	Adventure Games #1 SSSD	.....\$2
PP011	Page Pro Pics #2 SSSD	.....\$2

G012	Games Disk #7 SSSD	.....\$2
G013	Games Disk #8 SSSD	.....\$2
AV014	Adventure Games Disk #2 SSSD	.....\$2
PP015	Page Pro Pics #3 SSSD	.....\$2
U016	Utilities Disk #2 SSSD	.....\$2
G017	Games Disk #9 SSSD	.....\$2
AT018	TIA Char/Fonts Disk#2 SSSD	.....\$2
PP019	PP Pictures Disk #4 SSSD	.....\$2
PP020	PP Xmas Cards Disk #5 SSSD	.....\$2
PP021	PP Xmas Cards Disk #6 SSSD	.....\$2
G022	Games Disk #10 SSSD	.....\$2
G023	Games Disk #11 SSSD	.....\$2
PP024	PP Xmas Cards Disk #7 SSSD	.....\$2
PP025	PP Xmas Cards Disk #8 SSSD	.....\$2
G026	Games Disk #12 SSSD	.....\$2
G027	Games Disk #13 SSSD	.....\$2
AT028	TI Artist Fonts Disk #2 SSSD	.....\$2
AT029	TIA Pictures Disk #3 SSSD	.....\$2
AT030	TI Artist Fonts Disk #4 SSSD	.....\$2
G031	Games Disk #14 SSSD	.....\$2
G032	Games Disk #15 SSSD	.....\$2
PP033	PP Pictures Disk #9 SSSD	.....\$2
AT034	TI Artist Fonts Disk #5 SSSD	.....\$2
U035	Utility Disk #3 SSSD	.....\$2
G036	Games Disk #16 SSSD	.....\$2
PP037	PP Pictures Disk #10 SSSD	.....\$2
AV038	Adventure Games Disk #3 SSSD	.....\$2
PP039	PP Pictures Disk #11 SSSD	.....\$2
G040	Games Disk #17 SSSD	.....\$2
PP041	PP Pictures Disk #12 SSSD	.....\$2
AV042	Adventure Games Disk #4 SSSD	.....\$2
PP043	PP Pictures Disk #13 SSSD	.....\$2
PP044	PP Pictures Disk #14 SSSD	.....\$2
AV045	Adventure Games Disk #5 SSSD	.....\$2
G046	Games Disk #18 SSSD	.....\$2
PP047	PP Pictures Disk #15 SSSD	.....\$2
E048	Education Greek SSSD	.....\$2
E049	Education Vietnamese SSSD	.....\$2
E050	Education Czech 1 SSSD	.....\$2
E051	Education Czech 2 SSSD	.....\$2
E052	Education German SSSD	.....\$2
E053	Education French SSSD	.....\$2
E054	Education Russian SSSD	.....\$2
E055	Education Japanese SSSD	.....\$2
E056	Education Spanish SSSD	.....\$2
PP057	PP Pictures Disk #16 SSSD	.....\$2
G058	Games Disk #19 SSSD	.....\$2
U059	Utility Disk #4 SSSD	.....\$2
U060	Utility Disk #5 SSSD	.....\$2
AT061	TI Artist Fonts Disk #6 SSSD	.....\$2
G062	Games Disk #20 SSSD	.....\$2
PP063	PP Pictures Disk #17 SSSD	.....\$2
G064	Games Disk #21 SSSD	.....\$2
G065	Games Disk #22 SSSD	.....\$2
PP066	PP Pictures Disk #18 SSSD	.....\$2
PP067	PP Pictures Disk #19 SSSD	.....\$2
U068	Utility Disk #6 SSSD	.....\$2
A382	Boot (40 Column Vers) SSSD	.....\$2
A386	Boot (Hard Disk Vers) SSSD	.....\$2
A401	Pix Version 1.2 SSSD	.....\$2
A430	Configuring Funnelweb SSSD	.....\$2
A448	Tips Vers 1.7 SSSD	.....\$2
A448A	Tips Graphics #1 SSSD	.....\$2
A448B	Grips (Tips Companion) SSSD	.....\$2
A450	Funnelweb 4.40 DSSD	.....\$2
A450A	Funnelweb 4.40 (3 Disks) SSSD	.....\$4
A450/40	FWB Editor Update 40 Col DSSD	.....\$2
A450/40	FWB Editor Update 40 Col SSSD	.....\$3
A450/80	FWB Editor Update 80 Col DSSD	.....\$3
A489	Fontart #1 SSSD	.....\$2
A490	Fontart #2 and #3 DSSD	.....\$2
TCC1	Tigercub Collection #1 SSSD	.....\$2
TCC2	Tigercub Collection #2 SSSD	.....\$2
TCC3	Tigercub Collection #3 SSSD	.....\$2
TCC4	Tigercub Collection #4 SSSD	.....\$2
TCC5	Tigercub Collection #5 SSSD	.....\$2
TCC6	Tigercub Collection #6 SSSD	.....\$2
TCC7	Tigercub Collection #7 SSSD	.....\$2
TCC8	Tigercub Collection #8 SSSD	.....\$2
TCC9	Tigercub Collection #9 SSSD	.....\$2
TCC10	Tigercub Collection #10 SSSD	.....\$2
TCC11	Tigercub Collection #11 SSSD	.....\$2

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

asking him to advise us of the current situation regarding his ability to supply the outstanding orders, hoping that he would at least have the decency to respond advising us one way or another, but no, nothing, not one word to say that we would or would not eventually receive our cards. This is the kind of treatment we get from a man who was ever so willing to accept over \$3000.00 of our members money and, according to reports that have filtered through to us, quickly spend it on unrelated goods and services.

It is to be hoped that other TI Groups and User's in both Canada and the United States will see the OPA company for what they are and support us by refusing to buy OPA products until such time as they have filled their overseas obligations.

**END OF ARTICLE**

A description of programs G001 to U068 inclusive can be found in the TND issues starting March 1993 through to this issue March 1994.

### March 1994 Software File

#### STOP PRESS

Bits and Bites  
By Larry Saunders

The following article concerning OPA, the company that owes 15 of our own club members TIM/SOB Cards, appeared in the December issue of MICROpendium.

"OPA" unvited

For probably the first time, a TI vendor has been specifically 'uninvited' to a TI fair. Charles Good of the Lima, Ohio, Users Group has stated in the group's newsletter that Oasis Pensive Abacutors of Toronto, Canada, will not be allowed to have a booth at the next Lima Multi Users Group Conference unless he receives evidence that several overseas complaints have been resolved. The Lima newsletter printed complaints regarding non-receipt of items ordered from Australia, Belgium and England.

In a recent message on Delphi's TI-Forum, Gary Bowser of OPA noted that there are about 40 outstanding TIM/SOB orders and that the company hopes to resume production on them soon. Costs prohib him producing them in small lots of 10 or fewer, he said."

We, the Directors of TISHUG (Australia), would like to commend the Lima Group for their stand on this matter as we feel that if the TI Groups in America and Canada do not start to actively boycott products produced by OPA then we in Australia, Belgium and England will never see the TIM/SOB cards that we ordered from OPA over two years ago.

In October 1991, the Brisbane and Sydney TI groups ordered and paid for at least 20 TIM/SOB Cards so OPA can hardly say, with any honesty, that they need orders for at least 10 units to justify the cost of supplying the outstanding orders given that they currently owe their overseas customers about 40 units, as indicated in the above article. One must seriously doubt the honesty of Gary Bowser when he fails to respond to correspondence from the TI Groups that have tried to communicate with him on many occasions. Although we, the Sydney Group, placed our order for 15 Cards through the Brisbane group to make up a sizeable order we eventually became frustrated on hearing from the Brisbane group that they had tried both corresponding and phoning Bowser on numerous occasions with no success, always getting a recorded message when telephoning and never receiving a reply either by mail or phone.

We have since written two letters direct to Bowser

Diskname G065

-----  
Total Sectors 358 Free Sectors 25  
Date MAR1994 Files 14

Games disk: Caterpillar, Cave Creatures, are a shootout type games.  
King of the castle, Leaper, are a game that takes skill.  
Left/Right, a game that looks simple but it is not.  
Ninja, a adventure type game that is now converted to Joysticks, the original version was only Keyboard.

CATERPILL	33*Prog	CATERPILM	19*Prog
CAVE	33*Prog	KINGOFCSXB	37 Prog
LEAPER	40 Prog	LEFT/RIGHT	23 Prog
LOAD	5 Prog	NINJA/1	21 Prog
NINJA/2	45 Prog	NINJA/3	15 Prog
NINJA/4	9 Prog	NINJA/5	22 Prog
NINJALOAD	3 Prog	ROOT	28 Prog

Diskname P066

-----  
Total Sectors 358 Free Sectors 14  
Date MAR1994 Files 11

Page pro pictures, Scanned by Alf, convered and cleaned up by me. The PENSET picture was used TND Feb 1994 page 23. Note: all pictures that are in the TND are photo reduced.

ANSWER	20 I 13	ASHTRAY	28 I 13
CALCULATOR	28 I 13	HEATER	27 I 13
INOUTTRAY	28 I 13	PENSET	28 I 13
PEOPLE1	51 I 13	PEOPLE2	50 I 13
PHONE2	28 I 13	PHONE3	28 I 13
PHONE4	28 I 13		

Diskname P067

-----  
Total Sectors 358 Free Sectors 61  
Date MAR1994 Files 10

Page pro pictures, Scanned by Alf, convered and cleaned up by me. Plane 4 was used in Feb 1994 TND page 13. I have did some more work on that picture since.

PLANE1	16 I 13	PLANE2	19 I 13
PLANE3	25 I 13	PLANE4	69 I 13
PLANES	28 I 13	RUBISHBIN	28 I 13
TYPE1	28 I 13	TYPE2	28 I 13
TYPE3	28 I 13	TYPE4	28 I 13

Diskname U068

Total Sectors 358 Free Sectors 142  
Date MAR1994 Files 108

A heap of little GR pictures that can be used with the LABEL Maker program.

AND/GR	2	1254	APPLE/GR	2	1254
ARROW1/GR	2	1254	ARROW10/GR	2	1254
ARROW11/GR	2	1254	ARROW12/GR	2	1254
ARROW2/GR	2	1254	ARROW3/GR	2	1254
ARROW4/GR	2	1254	ARROW5/GR	2	1254
ARROW6/GR	2	1254	ARROW7/GR	2	1254
ARROW8/GR	2	1254	ARROW9/GR	2	1254
ASTRSK1/GR	2	1254	ASTRSK2/GR	2	1254
AXE/GR	2	1254	BALOONS/GR	2	1254
BEAR/GR	2	1254	BELL/GR	2	1254
BELL2/GR	2	1254	BELL3/GR	2	1254
BIRD/GR	2	1254	BOOK1/GR	2	1254
BOOK2/GR	2	1254	BSKTBAL/GR	2	1254
CANDLE1/GR	2	1254	CANDLE2/GR	2	1254
CAT/GR	2	1254	CAT2/GR	2	1254
CHERRYS/GR	2	1254	CIRCLES/GR	2	1254
CLAMP/GR	2	1254	CROSS1/GR	2	1254
DANCE/GR	2	1254	DIAMOND/GR	2	1254
DOG/GR	2	1254	DONKEY/GR	2	1254
DONKEY2/GR	2	1254	EAGLE/GR	2	1254
EAGLE3/GR	2	1254	ELEPHNT/GR	2	1254
ELPHNT2/GR	2	1254	FEATHER/GR	2	1254
FIST/GR	2	1254	FLAG/GR	2	1254
FOOTBAL/GR	2	1254	FROG1/GR	2	1254
FROG2/GR	2	1254	FRUIT/GR	2	1254
GHOOPER/GR	2	1254	GRAPES/GR	2	1254
GYMNAST/GR	2	1254	HAMMER/GR	2	1254
HAND1/GR	2	1254	HAND2/GR	2	1254
HANDSAW/GR	2	1254	HEART1/GR	2	1254
HERMES/GR	2	1254	HOCKEY/GR	2	1254
HORSE/GR	2	1254	JACKBOX/GR	2	1254
KITE/GR	2	1254	LEAF/GR	2	1254
LEMON/GR	2	1254	LIBERTY/GR	2	1254
LIGHING/GR	2	1254	LIZARD/GR	2	1254
LOBSTER/GR	2	1254	LUCK/GR	2	1254
MAILBOX/GR	2	1254	MONEY/GR	2	1254
MOUSE/GR	2	1254	ONEWAY/GR	2	1254
PBRUSH/GR	2	1254	PENCIL/GR	2	1254
PEUGEOT/GR	2	1254	PHONE1/GR	2	1254
PHONE2/GR	2	1254	PHONE3/GR	2	1254
RAIN/GR	2	1254	RCKHRS2/GR	2	1254
RX/GR	2	1254	SBERRY/GR	2	1254
SDRIVER/GR	2	1254	SFLAKE/GR	2	1254
SHAKING/GR	2	1254	SIGNIA/GR	2	1254
SKULL/GR	2	1254	SOCCER/GR	2	1254
STAMP/GR	2	1254	STAR1/GR	2	1254
STAR2/GR	2	1254	STAR3/GR	2	1254
STAR4/GR	2	1254	STORM/GR	2	1254
SUN/GR	2	1254	TOWER/GR	2	1254
TRACK/GR	2	1254	TRIANG1/GR	2	1254
TRIANG2/GR	2	1254	TRIANG3/GR	2	1254
TRIKE/GR	2	1254	TWIRL/GR	2	1254
VOLCANO/GR	2	1254	VOLLEY/GR	2	1254
WMELON/GR	2	1254	WRENCH/GR	2	1254

END OF ARTICLE

JUST A ONE LINER (ED)

Think of a number between one and fifty. Double it, subtract sixty-one, add one, subtract the number you started with, close your eyes ..... dark isn't it.

## 24K OF DATA STORAGE

Author Unkown

Copied from ROM newsletter, Feb, '91  
Re-typed by Bob Relyea

If you need to work with quite a bit of data or would like to change programs but save the data after you press CALL QUIT, then you can set up the 24K of High-Memory in the PEB as a single data file just as you would any file with one exception- you must precede the OPEN statement with a CALL LOAD to location -24574 as follows:

For INT-VAR files - 24  
For DIS/VAR files - 16  
For INT/FIX files - 8  
For DIS/FIX files - 0

Here is an example:

If you want to open the expansion memory for D/V 80 files, this is what you do:

```
100 CALL INIT
110 CALL LOAD(-24574,-16)
120 OPEN#1:"EXEPMEM2",RELATIVE, UPDATE, DISPLAY,
    VARIABLE 80
```

Then continue as you normally would.

If you want to store both data and Assembly Language routines at the same time, do this:

```
100 CALL INIT
110 CALL LOAD(-24574,-16)
120 OPEN#1:"EXPMEM2"
130 CALL LOAD("DSK1.ASSM1")
140 CALL LOAD("DSK1.ASSM2")
150 CALL LINK("START")
160 REM CONTINUE REST OF PROGRAM
```

In the above example, the 24K of high memory was saved for use as a DATA file (D/V 80 format). Then the assembly routines were loaded. The computer will look for the best place to put the routines and will adjust the pointer accordingly. After the routines are loaded, a link statement starts the first routine and off we go.

If that is not enough for you, you can also use the Mini-Memory for 4K more of Assembly routine storage! Now, that is 16K of program storage space for Assembly routines (Good news Ross? ED).

END OF ARTICLE



DON'T BE  
A MUG  
WRITE A  
TND  
ARTICLE  
NOW

### 3D PLOTTING

by Pete Brooks  
(Courtesy TI Users Perth)  
Re-typed by Bob Relyea

Pete Brooks' plotting program is an up-dated version of a program by Bill Van Kerkoerle, a TI user in Holland. It creates a very stunning three-dimensional plot. EDITOR'S NOTE: I have just typed in and run the following program so I know it works. It takes about 10-15 minutes to create what looks like a flying saucer on the upper-half of the screen. I am sure the program could be modified to create other designs using his program as a basis for further work.

```
100 REM !!!!!!!!!!!!!!!
110 REM !3D PLOTTING!
120 REM !PETE BROOKS!
130 REM ! TIBASIC !
140 REM !!!!!!!!!!!!!!!
150 REM
160 DIM C$(128)
170 GOTO 390
180 Y=INT(R/8+.875)
190 X=INT(C/8+.875)
200 CALL GCHAR(Y,X,H)
210 IF H>31 THEN 280
220 IF S=95 THEN 380
230 S=S+1
240 C$(S-31)=Z$&CHR$(Y)&CHR$(X)
250 CALL CHAR(S,Z$)
260 CALL HCHAR(Y,X,S)
270 H=S
280 H=H-31
290 B=C-X*8+8
300 P=2*R-16*Y+16+(B<5)
310 IF B<5 THEN 330
320 B=B-4
330 I$=SEG$(B$,POS(H$,SEG$(C$(H),P,1),1),4)
340 I$=SEG$(I$,1,B-1)&"1"&SEG$(I$,B+1,4-B)
350 I=POS(B$,I$,1)
360 C$(H)=SEG$(C$(H),1,P-1)&SEG$(H$,I,1)&SEG$(C$(H),P+1,
18-P)
370 CALL CHAR(H+31,C$(H))
380 RETURN
390 CALL SCREEN(8)
400 S=31
410 CALL HCHAR(1,1,3,768)
420 B$="0000,0001,0010,0011,0100,0101,0110,0111,1000,1001
,1010,1011,1100,1101,1110,1111"
430 H$="0...1...2...3...4...5...6...7...8...9
440 HR$="0...B...4...C...2...A...6...E...1...9
450 Z$="0000000000000000"
460 H1=192
470 V=104
480 X1=H1/2
490 X2=X1*X1
500 Y1=V/2
510 Y2=V/4
520 FOR X5=0 TO X1 STEP 2
530 X4=X5*X5
540 M=Y1
550 A=SQR(X2-X4)
560 FOR I1=-A TO A STEP V/10
570 R1=SQR(X4+I1*I1)/X1
580 F=(R1-1)*SIN(R1*12)
590 R=INT(I1/5+F*Y2)
600 IF R<=M THEN 650
610 M=R
620 R=Y1-R
630 C=X1-X5+32
640 GOSUB 180
650 NEXT I1
660 NEXT X5
670 H=S-31
680 FOR K=1 TO H
690 O$=C$(K)
700 Y=ASC(SEG$(O$,17,1))
710 X=33-ASC(SEG$(O$,18,1))
720 FOR L=2 TO 16 STEP 2
730 I$=SEG$(O$,L,1)
740 J$=SEG$(O$,L-1,1)
```

```
750 I$=SEG$(HR$,POS(H$,I$,1),1)
760 J$=SEG$(HR$,POS(H$,J$,1),1)
770 C$(K+H)=C$(K+H)&I$&J$
780 NEXT L
790 CALL CHAR(K+S,C$(K+H))
800 CALL HCHAR(Y,X,K+S)
810 NEXT K
820 GOTO 820
```

END OF ARTICLE

### Techo Time

with Geoff Trott

#### RAMdisk batteries

I was looking at a RAMdisk with 8 Kbyte static RAM chips which was mis-behaving. It had two layers of chips soldered in and was not keeping its contents. I have a bit of trouble with these boards as my usual testing setup does not agree with them. To make testing easier for me, I have a precursor to the two way interface which I can plug into the side of my console and into which I can plug a PEBox card with the components uppermost. For some reason, the 8 Kbyte RAMdisk gives errors on its memory test, whereas the 32 Kbyte RAMdisk is fine but they both will work in a BEBox. One day I will track it down and work out why. Meanwhile I was trying to find out why this RAMdisk was not working properly. Its battery was a Lithium one, which was not flat, so I measured the current which was being drawn from the battery and found that it was 0.4 mA. This seemed to be too much to me, so I started to look for problems.

I removed the diode which leads from the 5 volt supply to the battery supply, which may have had a reverse leakage problem, but this made no difference. I then removed the only memory chip in a socket (U11) and found that the current barely changed. Even though there were 24 other memory chips, they should not be drawing all that current. I then decided that the only possibility was a bad memory chip or one of the decoupling capacitors (0.01 uF) connected to the battery power supply. Since it was easier to unsolder the capacitors than the ICs, I unsoldered one leg of all the capacitors. That caused the current from the battery to fall to about 0.004 mA, which was much more like the expected value. I found that one capacitor measured 15 kohm and when it was replaced with a new one, the current from the battery remained at the low level. While soldering near another capacitor, I found that I created the same problem, so excess heat is one probable cause for the capacitors to start to leak. The heat probably melts the dielectric in the capacitor.

I write about this as it may cause a problem for others with batteries which are not being re-charged, or even with all batteries and only occasional use. It is easy to measure the current for a system without re-chargeable batteries, as there is a diode which the meter can be put in parallel with. It is harder with re-chargeable batteries, as there are only small resistors to measure the current with. I have written

before about my preference for normal batteries, as I have seen too many printed circuit boards damaged by chemicals from re-chargeable batteries. It is obviously very important to minimise the current drawn from normal batteries.

## Cadet batteries

About the same time as I completed the repair on the RAMdisk, I decided to replace the batteries in the club's Cadet system. This is the very neat addition to a basic system, designed and built by Colin Christensen in Brisbane. It plugs into the console and provides 32 Kbyte memory expansion, PIO printer port, TI-Writer editor and formatter in ROM and battery backed memory to store program and text files. There are other rather neat features as well but I recommend you ask at the club for a demonstration and read the reviews for more information.

As I was saying, the club's Cadet had been sent back to Brisbane for an upgrade and came back with a flat battery. I took it apart and found that it took a disk lithium battery, which was soldered in. It certainly was flat, so I bought a new one and prepared to solder it back in. While I was doing this, I decided to check that the current was small and found that it was 4 mA!! This was far too much for this type of battery so I now knew why it had discharged so quickly. It took a bit of poking around as I did not have a circuit diagram, but I eventually found the problem. To explain it I will have to tell you some details of the device.

There are three memory chips used, an EPROM for the DSR and TI-Writer programs, and two 32 Kbyte static RAM chips. These are stacked on top of each other as most pins are common. The EPROM is on the bottom. The 32 Kbyte memory expansion is next with its power coming from the 5 volt supply, the same as the EPROM. On top is the 32 Kbyte file storage RAM which is battery backed up so its power supply is either from the 5 volts when it is present or the battery when the 5 volts is not there. In order for the contents of this memory to be kept, the CS(L) (chip select line) must be held high when the 5 volts is not there and the chip is powered from the battery. The static RAM enters its power down mode when the CS(L) goes high. This is done by putting a resistor between the CS(L) pin and the battery supply, and driving the pin from an open collector output. This has all been done correctly, but the problem was that the signal to the CS(L) pins for the two RAM chips (on top of the EPROM) are connected to the pins on the chips by wires from the board. Unfortunately, these wires were crossed over (which was difficult to see) so that the CS(L) line for the battery backed RAM was actually connected to the RAM whose power was connected to the 5 volt supply. When the power supply was removed the battery then had to supply the whole chip through the CS(L) line while the RAM with the battery supply had its CS(L) line held low which means it was not able to enter its power down mode. The result was a large current from the battery and a flat battery.

You may wonder why this was not found more quickly. I imagine that when the 5 volt supply is present, the function of the two memories is interchangeable so that all would appear to work well. I imagine Colin Christensen would be able to tell with a careful check. I hope there are no other Cadets with the same problem, but if there are it is very easy to fix.

### MISSED PRINT.

Well there has been a technical hitch already, there were some very important letters missing from Geoff Trott's article on Ramdisk Batteries (page 7-8 Jan/Feb issue) I hope not too many people were confused when strange characters appeared in the text. Here you will be able to read the full article (ED).

 **END OF ARTICLE**

## LEARN TO KNOW YOUR TI

### LESSON 13

with Percy Harrison

In this issue we will concentrate on the "IF" statement which is a powerful but intricate command that is at the very heart of the computer as a logic machine.

The IF statement appeals both to our verbal and our visual imagination. The GOTO command has already introduced you to the idea that the flow control down the program may be altered. To that idea is now added the conditional test: if an "assertion" is true, a branch occurs; if it is false, the program control continues to flow down the line list.

The assertion being tested for truth is called "phrase A". A jump to a new line number is made if the assertion is true.

Two levels of abstraction occur in the assertions. On the literal level we have "equal and not equal".

```
AS = BS
CS <> DS
```

The next level up we have the TRUTH or FALSITY of the assertion.

A two step process is needed to use the assertion properly:

1) What does the assertion say?

2) Is the assertion true?

The larger set of relations:

< >, =, =<, => and <>

will be treated later. Now on with the lesson.

### LESSON 13 THE IF STATEMENT

```
20 PRINT "NOT DONE?"
25 PRINT "DO IT! THEN, "
30 PRINT "YOU MAY HAVE SOME CAKE"
```

The computer looks in box WS. It sees if the string in the box is the same as "DONE". If it is, the program goes to line 30. If it is not, the program goes to the next line (20).

Clear the memory and enter:

```
10 CALL CLEAR
15 PRINT "HOLD YOUR BREATH "
20 PRINT "STILL HOLDING ? (YES OR NO)"
30 INPUT AS
40 IF AS="YES" THEN 15
50 PRINT "WHY ARE YOU WHEEZING? "
```

Run the program. Try answering "YES", "NO" or "MAYBE". What happens?

YES \_\_\_\_\_

NO \_\_\_\_\_

MAYBE \_\_\_\_\_

### THE IF STATEMENT

The IF statement has two parts:

```
40 IF phrase A THEN number N
```

It means: 40 IF phrase A is true Then go to line number N

Example: 40 IF A\$="YES" THEN 15

IF A\$= "YES" is true, jump to line 15.

IF A\$= "YES" is false, go to next line.

CAREFUL! The " number N" must be a number. It cannot be a variable.

Right: 30 IF B\$="HI" THEN 25

WRONG: 30 IF B\$="HI" THEN N

### THE "IF" IN ENGLISH AND BASIC

In ENGLISH:

IF your homework is done, THEN you may have some cake.

In BASIC:

10 IF W\$="DONE" THEN 30

### DRAWING MAPS IN YOUR PROGRAM

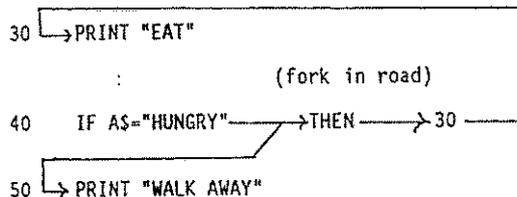
IF makes a fork in the road.

When it sees "IF" the computer must choose which road to take.

If "phrase A" is true, it must go to a new line number.

If "phrase A" is false, it goes down to the next line right away.

Here is the road map:



### SKIPPING LINES

The IF command can skip ahead too.  
Enter:

```
10 REM SKIP LINES
20 PRINT "ARE YOU HAPPY? (Y OR N)"
25 INPUT A$
30 REM -----IS PHRASE A TRUE
31 IF A$="Y" THEN 60
40 REM -----THE ANSWER WAS "N"
45 PRINT "TOO BAD!"
47 GOTO 90
60 REM -----THE ANSWER WAS "Y"
65 PRINT "I'M GLAD"
90 REM THAT'S ALL FOLKS!
```

### THE "NOT EQUAL" SIGN

Two signs:

= means "equal"  
<> means "not equal"

To make the "<>" sign:

hold down the SHIFT key  
then press the "<" key, then the ">" key.

Look: 40 IF phrase A THEN 60

"Phrase A" is a phrase that is TRUE or FALSE.

Pick B\$<>"COLD" FOR "PHRASE A" and put it into:

40 IF B\$<>"FIRE" THEN 60

Look: If the B\$ box contains "FIRE"  
then B\$ is not equal to "COLD"  
so the phrase B\$<>"COLD" is TRUE.

The computer will go to line 60

Or:

If the B\$ box contains "COLD"  
then B\$ is equal to "COLD"  
so the phrase B\$<>"COLD" is FALSE.

The computer will go to the next line.

Here is how it looks in a program:

```
10 PRINT "WITH DOGS IT'S A COLD NOSE"
11 PRINT
12 PRINT "WITH DRAGONS, IT'S ..."
13 PRINT
15 PRINT "HOW'S YOUR DRAGON'S BREATH?"
16 PRINT
20 PRINT "(ENTER 'FIRE' OR 'COLD')"

30 INPUT B$



35 PRINT



40 IF B$<>"COLD" THEN 60



50 REM ----- THE DRAGON NEED'S HELP!



55 PRINT "FEED HIM SOME HOT CHILLI, THEN ..."



56 PRINT



60 REM ----- THE DRAGON IS FINE



65 PRINT "PAT HIM ON THE HEAD, BUT WATCH OUT!"



80 PRINT



85 PRINT "'NICE DRAGON'"


```

### Assignment 13:

1. Write a program which asks if you are HAPPY. If you answer NO, it asks again. If you answer YES, it says GOOD.
2. Write a boy-girl program. Ask if the user is a "BOY" or a "GIRL". If the answer is "BOY" print "SNIPS AND SNAILS". If the answer is "GIRL", print "SUGAR AND SPICE".
3. Write a "pizza" program. Ask what topping is wanted. Make the computer answer something silly for each different choice. You can choose mushrooms, pepperoni, anchovies, green peppers, etc. You can also ask what size.
4. Write a color guessing game. One player INPUTs a color in string C\$ and the other keeps INPUTing guesses in string G\$. Use two IF lines, one which tells you that if G\$<>C\$ you are wrong and to try again, and the other with an "=" sign and tells you that you are correct.

### ANSWERS TO LESSON 12

#### Assignment Question 12-1

```
10 REM ** A PAIR OF DICE **
15 CALL CLEAR
20 LET D1=1+INT(6*RND)
22 LET D2=1+INT(6*RND)
25 D=D1+D2
30 PRINT "THE ROLL GAVE:"
32 PRINT
33 PRINT " THE FIRST DIE ";D1
34 PRINT " THE SECOND DIE ";D2
35 PRINT " THE DICE ";D
```

```

47 PRINT
48 PRINT
50 PRINT "AGAIN?"
51 PRINT
55 INPUT Y$
60 IF Y$="Y" THEN 15

```

## FUNNELWEB 40 COLUMN EDITOR -VN 5.00

By Tony Mc Govern

Part 2 -- Command and Control

### Assignment Question 12-2

```

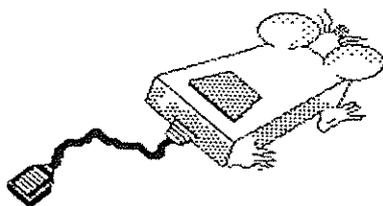
10 REM-----PAPER, SCISSORS, ROCK
12 CALL CLEAR
13 PRINT
14 PRINT
16 PRINT "PLAY THE "
18 PRINT
19 PRINT " PAPER "

20 PRINT " SCISSORS "
21 PRINT " ROCK "
22 PRINT
23 PRINT "GAME AGAINST THE COMPUTER"
24 PRINT
25 PRINT "PRESS 'CLEAR' KEY TO END GAME "
26 PRINT
27 PRINT "ENTER YOUR CHOICE <P,S,R>"
29 REM-----COMPUTER CHOOSES ITS MOVE
30 C=INT(3*RND)+1
31 C$="P"
32 IF C=1 THEN 36
33 C$="S"
34 IF C=2 THEN 36
35 C$="R"
36 REM-----C$ IS THE COMPUTER'S CHOICE
37 INPUT Y$
38 REM-----Y$ IS YOUR CHOICE
39 REM
40 REM-----IS THERE A TIE?
41 REM
50 IF C$<>Y$ THEN 60
52 REM-----THERE IS A TIE
55 PRINT " TIE"
57 GOTO 30
59 REM
60 REM-----NO TIE, WHO WINS?
61 REM
62 IF C$<>"P" THEN 70
63 IF Y$="S" THEN 90
64 GOTO 80
70 IF C$<>"S" THEN 76
72 IF Y$="R" THEN 90
74 GOTO 80
76 IF C$<>"R" THEN 90
77 IF Y$="P" THEN 90
80 REM-----COMPUTER WINS
82 PRINT " COMPUTER WINS"
84 GOTO 30
90 REM
91 REM-----YOU WIN
92 REM
95 PRINT " YOU WIN"
99 GOTO 30

```

That's all for this month.

END OF ARTICLE



### (1) Editor Modes

Each of the Word Processor and Program Editor has two sub-modes, toggled by <ctrl-0>. In the Word Processor, these are the familiar word-wrap mode (solid cursor) and fixed mode (hollow rectangular cursor) and are essentially the same as set out in the TI-Writer manual to which you are referred.

In Program Editor mode the initial state is a modified and locked fixed mode with hollow cursor and is set up for writing source code in languages such as c-99. Tabs are initialized to Editor Assembler editor settings. Word-wrap is disabled to prevent accidental reformatting of source files into one giant paragraph and <cr>s are never written, except by special character mode. <Ctrl-0> toggles to a new ASMode (with diamond cursor) for writing assembly source code. In this mode each line is partially parsed as assembler code before it is stored in the text buffer when the cursor leaves the line. The label, opcode and operand fields are automatically up-cased as required by the assembler and some checking is done for common errors such as unmatched quotes or "." instead of "," in the operand field and non-alpha characters in opcodes.

### (2) New and Updated Editor Command Line

Several new command line 2-letter entries have been introduced in various categories. An important and the most obvious change to command mode is that text may be scrolled by line or page using the normal set of up/down scroll control keys. This allows the text to be inspected anywhere during command line entries, so that line numbers do not have to be remembered for large Copy/Move/Delete operations. The new entries are specified here by their English language version.

- <T > -- for Tabs is not strictly new, but now brings up a second command line which asks TABSETS (1-3)? and indicates the current setting as the default entry. Tab records are saved with files by the Word Processor and not by the Program Editor, but are recognized by both.
- <H > -- for Help mode brings up a series of help screens which are loaded from the Funnelweb disk with paging between them by <Q>, <A> and exit by <ctrl-C>. See FWD0C/ED40 for details of preparing Help screens.
- <QQ> -- for Quick Quit back to F'Web. The editor maintains a "file-edited" flag and if any text entry has been done since loading or saving the current file, a reminder to save the current work first will be issued. This warning also operates before Purge.
- <LT> -- for LoadTemporary file. The temporary loadfile name may be entered directly, or marked in SD with <T>. This allows for inserting all or part of external files into the edit workfile without disturbing its name.
- <DP> -- for set showDirectoryPrinter name. This allows the device name used by <ctrl-P>print Directory in SD to be preset to something other than the PF name. It is initialized to the PF print device at load time.

<MK> -- for Mark position in file. This sets a marker after line number entry, or else enter this with <ctrl-M> at the current top line, which may be scrolled to any line in the workfile while still in CMD mode. <fctn-; > in Edit mode is an alternative method.

<WC> -- for choice of WildCard character for use in FS/RS search strings. This initialized as the "\*" character.

< > -- a blank CMD line. On the main CMD line this returns to the Edit mode at the original exit point.

<number> -- from the main command line a number acts like a Show lines command. "E" for Eof is not recognized in this direct return as a letter may conflict with other commands. You can just use a big number, say 2222, instead of <E> but it is easier to use <S > for Show line.

Some control key presses now have new special functions in CMD mode and mostly were of no function before. Where the new function also applies in Edit mode it will be listed in that section. For a summary of all key functions see the help screens supplied as HELP4A and HELP4B.

<ctrl-M> now writes the current top of page line number at the cursor position on the command line in insert mode. If you must have <cr> on the command line use <ctrl-8> or special character mode.

<ctrl-l> exits from command mode to the current top of page. It has the same effect as <ctrl-M> followed by <enter>.

<ctrl-2> exits from command mode to the departure point from edit mode.

### (3) Find and Replace String

Find/Replace String commands now take up to 3 numbers ahead of the string entry. Two numbers give the start and finish column for the search. For 3 numbers or 1 number the first or only number is the number of

match occurrences to skip before stopping. This is similar to the Editor Assembler editor. In case you had not noticed, RS always worked like this. Also when no more matches are found, both FS and RS give an audible bloop and stop where they are. The start position for the search is resumed with <ctrl-0>.

Any non-numeric character may be used as delimiter, so that /ABC/defg/ or -ABC-defg- or aABCdefgga as RS string entry will all search for string ABC to be replaced with string defg. A wildcard character, set by <WC>, can be included in the search string. The search procedure ignores the character in the text line corresponding to each wildcard occurrence in the search string. Neither delimiter or wildcard can be a regular part of the search string.

### (4) New Edit Mode Functions

Changes have been made to the edit control keys so that many functions are available from the left hand in a compact block without stretching. Some keys were already in place, such as the cursor diamond <ctrl-ESDX> which duplicates <fctn-ESDX> and <ctrl-C> as shadow of <fctn-9>.

<ctrl-Q> pages towards the start of file (<fctn-6>).

<ctrl-A> pages towards the end of file (<fctn-4>).

<ctrl-Z> places the cursor after the end of the current line and is no longer the alternate Oops key which remains on <ctrl-l>.

<ctrl-H> shows the first page of the file.

<ctrl-J> shows the last page of the workfile.

<ctrl-B> breaks the current line at the cursor in all modes, but does not enable <cr>s with <enter> in word-wrap mode. In Word Processor fixed mode it replaces <fctn-2> which splits the line only in wordwrap mode.

<ctrl-R> rejoins lines that <ctrl-B> has broken. More precisely in wordwrap mode in the Word Processor it remains as an alternative key to <ctrl-2> as reformat. In all other modes it inserts the contents of the next non-blank line (blank includes paragraph break lines with <cr> only) into the current line at the cursor position. Leading spaces and trailing spaces and <cr>s are trimmed from the inserted material. If the effect displeases, just use Oops <ctrl-l> immediately. So there is now a way, in the various fixed modes, to insert material into a line without having to retype it.

The redefined <ctrl-H>, <ctrl-J> no longer duplicate <ctrl-6>, <ctrl-4>. In the Program Editor <ctrl-4>, <ctrl-6> search, instead of for <cr>s marking paragraphs, for either asterisks "\*" in the first column as marking assembly comment lines, or for the c-99

comment delimiter "/"\* at the start of a line. Strictly speaking, the search is for the first non-blank line following the target item. This substitutes jumping between comment lines in source code for paragraph jumping in Word Processor text. It also removes the annoyance of time consuming traversals to the start or end of source files if these keys are accidentally pressed in Program Editor mode.

Some minor changes have been made to improve safety and convenience in editing. <ctrl-N> in Edit mode now inserts a New line to match usage on PCs, as in Borland editors. Some other new functions are provided.

<ctrl-F> freezes the bottom part of the screen under a solid line drawn across the screen on the line below the cursor. Horizontal windowing does not shift the frozen part in 40-column mode.

<fctn-; > sets a bookmark for the line at the current cursor line. It is equivalent to Marking in command mode.

<fctn->> effectively does a Show line with the currently marked (<fctn-; > or Mark) line at top of screen. It is reasonably intelligent in the face of changing workfile contents and if confused reverts to line #1. It has been disabled as the system reset key combination.

<ctrl-0> returns to the Original line after some operations such as <fctn->>, RS and FS.

<ctrl-M> in the Program Editor only, inserts a blank line following the current line and places the cursor on the new line under the first character of the current line. If this line was blank the cursor stays in its current column. It retains its New Para function in word processor mode.

<ctrl-2> in the Program Editor only, deletes the current line if and only if it is blank between the current left and right margins. This makes it a lot safer for deleting a bunch of blank lines than <ctrl-3> which can do real damage in careless moments. It remains as Reformat in Word Processor word-wrap mode (solid cursor).

## (5) Performance Enhancements

This update retains all enhancements of recent Funnelweb editor versions over the TI original and those not mentioned elsewhere in these notes are listed here.

- (i) Text buffer capacity in 7-bit modes is increased by improved encoding, the degree depending on buffer contents.
- (ii) The colour selections using <ctrl-3> are the 10 configured in Funnelweb using CF/CG.
- (iii) The printer device name is read in from the main program and used as default for PF and directory <ctrl-P> printout in SD.
- (iv) The current Funnelweb system workfile name is used as LF and SF default. At the initial Funnelweb load, a default workfile name may be configured with CF/CG into Funnelweb. If left blank, the default utility pathname or the pre-existing filename will be set. If your system has 32Kb RAM in battery backed form, as on some RAMdisks, it may well survive power cycling if not otherwise wiped out by programs such as MENU on HRDs. Use FW as your auto-boot program on HRDs.
- (v) The <fctn=> system Quit key (<fctn=>, <ctrl=> in AVPC machines) remains disabled at all times while in the Editor, including SD.
- (vi) The text buffer manager routines have been completely rewritten and screen painting has been speeded up slightly to give "crisper" screen scrolling. Delay in word-wrap has been reduced so that there is less problem with loss of keystrokes, and Reformat is faster.
- (vii) Delete Lines is greatly speeded up, particularly on freshly loaded files.
- (viii) Copy Lines is now very rapid and does not leave partial copies if 'Text Buffer Full' would occur.
- (ix) Move Lines is now instantaneous and no longer can cause the 'Text Buffer Full' condition. It now merely shuffles line numbers instead of copying and then deleting. I have a suspicion TI's programmers were following big company rules for structured programming, with the usual result of bloated and slow code.
- (x) A right margin warning beep has been incorporated as a beep occurring 5 spaces in from the right margin during typing.
- (xi) Alpha case conversion is provided, in either Edit or Command modes. <ctrl-; > converts a lower case letter under the cursor to upper case and <ctrl-. > below it on the keyboard converts upper to lower case, with auto-repeat.
- (xii) The End-of-File message has been replaced with a full width ruler line which shifts with window and line number selection.
- (xiv) The margin release key <ctrl-Y> now gives full release on both left and right margins.

## (6) No Longer Supported

The Recover Edit <RE> function from the command line is no longer included. This had lost most of its original function in Funnelweb as the text buffer contents are overwritten on return to Funnelweb, unlike the original TI-Writer which returned to GPL code in the module GROM. As noted above under <QQ> Quick Quit, a warning is issued if the file contents have been added to since last loading or saving. This matches common practice on PCs. The Oops line recovery function remains unaltered on <ctrl-l>.

## APPENDIX - Updates and Bugfixes

Updates are mentioned only briefly. For details of new or improved features, see the relevant sections of these document files.

- o May 1993 -- Initial release
- o July 1993 -- Second release

## Changes:

- (1) Program files provided for basic editor and for an enhanced version, which now gives the Euro-Writer support.
- (2) Keys in SD in both editors altered so that <Q>, <A> replace <B>, <N> for page up/down. <ctrl-A> no longer exits SD in normal ED. System consistent delay loops used in SD also.
- (3) Command language text auxiliary files removed to special request status.

## Bug-Fixes:

- (1) Reloading of FW/LOAD from enhanced ED has been reworked and corrected.
- (2) <D>el files in enhanced SD now returns correctly and <ctrl-P> Directory print-out corrected in both versions.

END OF ARTICLE

## SAVING PAPER WHILE USING TI-WRITER

by Phil Nordstrand  
Retyped by Bob Relyea

The March (1990) MICROpendium had a very useful tip from Marjorie Mountjoy, Columbia, Md. It had to do with preventing the TI-Writer Formatter from ejecting the paper at the end of a document. It has the big advantage of allowing one to print two or more short documents on the same sheet of paper. It also makes it easier to add a graphics file (picture) after your text. You can also automatically duplicate the same short text on the same sheet by telling the formatter how many copies to make in response to one of its prompts. The procedure is as follows:

- 1) Start each document with CTRL-U, SHIFT-Q, CTRL-U. This selects the printer, enabling the printing of the document.
- 2) End each document with CTRL-U, SHIFT-S, CTRL-U. This deselects the printer, thereby disabling the form feeds supplied by the Formatter. When you are done, your printer will be off-line. It can be brought back by turning the power off and then on or by asking it to print CHR\$(17), which tells the printer the same thing as the Special Character described above in (1).

This has been tested on several printers and the following observations have been made:

- 1) It works if your printer accepts DC1 (ASCII 17) command to set printer on-line and DC3 (ASCII 19) command to set it off-line.
- 2) The MX-80 (and probably the TI Impact Printer) will not recognise these two Device Control Codes. However, it works fine for the Gemini 10 and Star NX 1000.
- 3) The indicator light on the printer does not show these commands when invoked.

END OF ARTICLE

Welcome to another of my interesting articles on games and adventures. Are they interesting?? Well I do not know, as no one tells me anything!! Down Robert, down!

The time in the Christmas Holidays (1993-94) between Christmas and New Year. I am having a few days off work, thus I have time to write some more (lots more) interesting well read (I hope) articles!!!

This month I will provide a map for Enchanter (solution in Aug 93 TND) - better late than never! Please note this will only happen if I can post it to the Editor before paste up. Who is the new editor anyway?? It makes it hard to send it doesn't it! I will also give you the solution to Planetfall another Infocom adventure.

Did you here that Zork is back?? Yes, Beyond Zork is now available on CD-ROM for IBM PC's - the cost is about \$75. I have not seen this yet, but will report back to you later!!

### PLANETFALL

The third in Infocom's wonderful series of Science Fiction Adventures is Planetfall. You will be delighted by the humor of the game. It is always charming you somehow. The game features several logical puzzles that can be solved with no greater magic than common sense.

The point of the game: You begin on the spaceship FeinsteIn. You are lowly cleaning help scrubbing the deck, when all of the sudden the ship explodes and by an accident of fate you happen to be standing near the escape pod right at the moment. You jettison from the FeinsteIn and land on a nearby planet with a strange mystery. It seems to have been recently abandoned for no reason. Survival is point one. You'll need food and rest. Repair many of the broken machines that you find. And then figure out why everyone is missing. Let's get started.

Deck Nine - All you have to do is keep waiting until the explosion, stay here - you'll be entertained (randomly) by the Ambassador from Blow' K-bibben-Gordo. After the ship explodes immediately go Port. Get in the Webbing. Wait, until the Pod lands and the Emergency Kit appears. Get out of Webbing. Take kit. Open Door. Go up. Keep going up until you get to Courtyard. Drop the brush and your ID. (You won't be needing the brush or the ID - they are excess baggage.)

Go north to the Plain Hall, then go NE. Go east until you see the Machine Shop. Go west to the Tool Room, take Laser (but drop the old battery) take the pliers and the flask and the Metal Bar. Then go back to the Machine Shop and put the flask under the spout.

Then go north to the Corridor Junction. Then go east till you get to Booth 2. In Booth 2 drop the Laser and the pliers. Then go west to the elevator lobby and push both buttons. Then go west till you get to the Corridor Junction. (If you're hungry, open the kit and enjoy a treat of goo.) From the Corridor Junction, go south then go east. Take the box. Then go back to the Booth 2. Drop the box. Then go back to the Corridor Junction. Now go north to the Administration Corridor, go north and south between the South Administration Corridor and the Administration Corridor until you see the glint of light (random). Then search the crevice in the Administration Corridor South. Hold the bar near the key (it's a magnet) and bingo...you got it. (If you don't get the key the game can't even begin.) Now drop the bar once you have the key. (If the bar comes in contact with any of the cards you'll find that they get scrambled - something you will regret.) Now go to the Mess Corridor. Unlock the padlock with the key. Drop

the padlock and the key and open the door. Drop everything except your uniform. Take the ladder and go back to the Administration Corridor. Drop the ladder. Open the ladder. Put ladder over the rift. Then go north over the ladder. Then go west into the offices. Open the drawers in the desks and take the kitchen card, the shuttle card, and the upper elevator card. By this time you should be getting tired. It's important that you find a place to sleep that is safe. Go back to the Dorm Area and get in bed. When you wake up you'll be bright and chipper for tomorrow.

Get out of bed and take your things. Go to the Mess Corridor. Go south into the Mess Hall. Take the canteen and open it up. Slide the kitchen card through the slot and go south. Put the canteen under the spout and push the button. Take the canteen. You've now found an unlimited source of food. Just make sure that you keep your canteen filled and you'll be O.K. Go back inside the Mess Hall and drop the Kitchen access card. Now go back to the Machine Room. From the Mess Room

Search the robot. Then turn it on. Go to the elevator lobby. Go south inside the lower elevator and drop the lower card and the shuttle card. Then go to the upper elevator. By this time your valuable friend Floyd should be bugging you for attention and loving. Eat when you are hungry...it's better to eat from your canteen than the kit. You might want to save the geo in the kit for emergencies. Just go back to the kitchen and refill your canteen when you need to. But don't forget to drop the kitchen card in the Mess Hall.

Go to the Upper Elevator. Slide the upper card through the slot. Push the up button. Wait. When the elevator door opens go south then go northeast to the Comm Room. Pay attention to the color of the flashing light. This will be the same color koulant that you'll have to get in the Machine Room. Go back to the elevator, activate the elevator and go downstairs to the Machine Room. Fill the flask. Push the same color button as the flashing light in the Comm Room, then take the flask.

Go back to the Comm Room and empty the flask in the hole. Pay attention to the new color light. Take the flask back downstairs to the Machine Room and push the new colored light koulant code. Take the filled flask back upstairs and empty the flask in the hole again. Do this one more time (there are three lights in all). This will fix the Comm Room. You can drop the flask since you won't be needing it any more. Now go back downstairs to the elevator lobby. Don't forget to drop the upper card in the upper elevator. Eat if you have to, but try to only eat from the canteen. If the canteen needs to be filled, do it now.

Go to the lower elevator. Slide the lower card through the slot. Then push the down button. Wait. Drop the lower card and take the shuttle access card. When the elevator stops get out by going north. Then go east. Go south and then go east. Slide the shuttle card through the slot. Push the lever up. Do it again. Wait until the display says 60. Then push the lever down. Again. Wait until the shuttle slides into the station.

Go west and drop the shuttle card. Go north, then go east. Go east again. At the fork go southeast to the Project Corridor West. Go east to the Project Corridor. Then go south to the Projcon Office. Go east to the Computer Room. Take the output and read the output. (By the way make sure that Floyd joins you in the Computer Room.) With Floyd go south. Then go north until the Project Corridor east. Then go east to the Main Lab. From the Lab go south.

Search the lab uniform pocket and take the card and the paper and the battery. The paper has the clue for opening up the combination lock in the Rec Corridor (a puzzle that you'll never need). Go back to the Project Corridor East. Then go north to the Library Lobby.

Play with the machine if you want. It's very good for clues about the whys of the story, and a lot of fun to translate. But time is of the essence. Go east to Booth 3. Slide the card through the slot and push the beige button.

Zap!!! You find yourself back in Booth 2. Take a look around; everything you put inside the Booth is waiting for you. Slide the card through the slot again and this time push the tan button. Wheeeeeee! Now you and your supplies are back in Booth 3. Take the pliers and the bedistor. Go west. Then go north. Then go north again to the Course Control. Open the cube. Remove the fused bedistor with the pliers. Drop the fused bedistor and the pliers. Take the good bedistor and put it in the cube. Close the cube.

Go to Systems Corridor West. Go down into the Repair Room. Make certain that Floyd is with you here. If he's not, just wait and he'll turn up. When Floyd shows, tell him to go north. When he comes back, \$teLL\$F\*back to the Systems Corridor. Then go north to the Planetary Defense. Open the panel. Take the second board. Put the shiny Fromitz in the socket. Close panel. You have now completed the middle portion of the game.

Eat when you have to. Now go to the Main Lab.

Open the Bio-Lock, go southeast then go east. Make sure that Floyd is with you. He'll volunteer for an important mission; let him. Open the door, close the door, wait, open the door, close the door. Floyd will be out of commission. Take the card and sing your song about the legend of Starcross. Go back to Booth 3. By now it's late in the day and time for rest. Once in Booth 3, slide the teleportation card through the slot and push the beige button. If you still have time before you rest, go ahead and fill your canteen in the kitchen, then go to sleep in the dorm area.

By now you're starting to feel pretty sick. If you didn't get a chance last night to fill your canteen, you'd better do that now. Head down to the Booth 2. Do your teleportation routine. Drop the teleport card, and make certain that you have the miniaturization card. Take the laser with the new battery. Go to the miniaturization booth. Slide the card through the slot then - type 384 (that was the number from the computer output).

Please do a game save at this point because you won't be able to waste any moves after this.

You have shrunk down to the size of a chip. At Station 384 go east to the Strip near the station. Then go north to the Strip near the relay. Look inside the relay. Make sure that your laser is set to 1. Fire the laser at the speck. Keep on doing that until the speck is no more. Once that's done, turn the dial on the laser to 6. Now head back south. Oh no! A killer microbe.

Fire the laser at the microbe. Keep firing until you find yourself holding a HOT laser. Once the laser is HOT, throw the laser over the side. The microbe will follow the laser and vanish to its death. Now head back to the Booth.

From the Auxiliary Booth go north to the Lab Office. Do another game save at this point (this will be your last chance to take a rest).

Search the desk, then take and wear the gas mask. Push the red button. Open the door. Go west into the Bio Lab. Fmo- \*Lab. Run back to the Bio-lock west. Open the Projcon office. Go south into the Cryo-elevator. Push the Button. Whewww!! Just wait a little bit and now all will come clear. The game is over. You are a hero! And all is well in the universe until your next adventure!

And your next adventure continues in the next edition of GAMES INFO (Series 3) - stay tuned!!

If you need to contact me, please feel free to do so... I am quite cheap at \$25 per hour.... only joking... it is \$45/hr.

#### Methods -----

1. By the BBS, Username: Games  
Password: Master ???#!#@?

Phone (02) 456-4606. Since BBS membership is FREE, every member should be ringing it up. If you do not have a modem, give me a call and I can get one for you eg Netcomm PocketModem, 300, 1200, 2400 Fax approx \$300.00

2. By Phone...  
(02) 743-3019 Home  
(02) 332-8110 Work (Until about 7pm)

3. By Post...  
46 Llewellyn Street  
Rhodes 2138  
New South Wales  
Australia

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

Just a Short Note:  
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(From the Author) "This article was written because I am on holidays and I am waiting for my girl friend to come over to entertain me!!"

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

 **END OF ARTICLE** 

#### TV NOISE SOLUTION

From The Kentuckyiana 99/4A Computer Society  
Retyped by Bob Relyea

When experiencing background noise, such as humming or buzzing on your TI and your TV, a slight adjustment of the modulator can usually clear it up. Here are the steps to follow:

- 1) Turn the volume of the TV all the way down.
- 2) Select the Master Title Screen and fine tune for the best picture.
- 3) Use a small screwdriver to carefully remove the cover from the modulator.
- 4) Increase the TV volume to 1/2 of the control range.
- 5) Insert the blade of the screwdriver into the slotted core of the coil marked L3 on the printer circuit board. This will crack if too if too much force is used.
- 6) While listening to the buzz on the TV speaker, slightly rotate the core no more than 1/8 of a turn in either direction until the buzz is at a minimum.
- 7) Replace the cover. Done!

 **END OF ARTICLE** 

# FUNNELWEB 80 COLUMN EDITOR -VN 5.00

By Tony Mc Govern

## Part 3 -- Auxiliary Features

### (1) Help Function

A series of help screens may be invoked from the main command line (see FWDOC/ED81). The help screens are stored in VDP memory at load time and response is immediate. The configuration process allows specification of how many files (up to 4) are to be loaded, so that if they are not wanted no time is wasted trying to load them. For the Word Processor the filenames expected are HELPO0 to HELP30 and for the Program Editor HELPO0 to HELPO3. Note that HELPO0 is common to both, and would normally be the key function chart. The help file loader in the Editor starts with HELPO0 and works through to HELP30 or HELPO3 for as many files as set by INSTALL/ED from CONFIG/ED. If one of the series is not found the loading continues to the next.

Content of the help screens is completely at the user's discretion and a sample original file is included. Help files are prepared as a 26 line DV/80 file and converted to program file format using the HELPMMAKE80 utility included in this package. Help screens prepared with All-Chars mode for that purpose will not show correctly in other modes. A set of useful help screens is provided, with more being added for your selection. Rename the ones you want into the help loading sequence.

The Help screens included in the issued package have the contents listed as follows. Filenames with numerics greater than 3 are supplied as possible alternatives to the main set.

- HELPO0 -- Common help for word processor and program editor. Provides quick reference list of Editor functions, with associated keys.
- HELPI0 -- Formatter dot command list and Editor PF option capabilities.
- HELPI20 -- Ready reference list of 8-bit character patterns for All-Chars mode, classified by type with pictorial guide for box characters.
- HELPI30 -- All-Chars mode pictorial guide to the keyboard. Courtesy of L. Tippett.
- HELPO1 -- Editor Assembler quick reference for TMS-9900 op-codes and other system information.
- HELPO2 -- Reference guide for Funnelweb system block.
- HELPO3 -- All-Chars mode character display with keys required for 8-bit characters, organized by hexadecimal ASCII value.
- HELPI40 -- As for HELPO3 but with decimal ASCII values instead of hexadecimal.
- HELPI50 -- Editor functions classified by key, as an inverse version of HELPO0.

### (2) Show Directory Functions

The Show Directory screen is always in 80 column mode even if the edit display is in 40 columns. The filename display is similar to that in DiskReview except that no check is done on program file type. Three filename buffers are displayed, showing the current workfile, the temporary loadfile and the file in the view buffer.

<1> to <9> -- causes the directory to be read from the floppy drive unit number indicated, or from the RAMdisk emulation. This function assumes standard floppy sector access is supported at DSR sub-program level and that the TI specifications for the disk DSR and floppy disk structure have been maintained (the CorComp RAMdisk deviates from TI standard in unsympathetic ways and must be treated as a pathnameaccess). In particular the Myarc DSQD extension to 720 Kbyte drives (with 2 sectors

per allocation unit) is supported, but individual file sizes are reported as sectors used rather than as sectors allocated (either 1 or 2 less than actually allocated). The disk sectors used/free are as allocated. Floppy drive identification outside the range 1 to 9 is not supported and any RAMdisk emulated drive so designated must be accessed as a pathname.

- <0> -- as the disk number, reads the Internal, Relative 38 catalog pseudo-file for the pathname as configured or as last entered by <HD> (see FWDOC/ED81) from the command line. This entry uses an assembly language version of the standard Basic program for reading the catalog file as specified by TI for any drive or as extended by Myarc to directories on hard drives. It has been specifically coded to cover quirks of the Myarc HFDC. This mode operates at file DSR level only and a directory so obtained does not indicate fractured files. File protection is shown, but nothing can be done about it, as alteration may require sub-programs not defined for standard disk DSRs. Marking, deleting and viewing function normally. The sectors used/free display may well be nonsensical for hard disk directories, but is retained for occasions when it is correct.
- <ctrl-Q> -- in pathname mode reads the parent directory of the currently displayed sub-directory. The sub-directory name is also trimmed off the pathname stored in the <HD> name buffer.
- <E>, <X> -- move the cursor bar up or down, paging the display as appropriate.
- <ctrl-E>, <ctrl-X> -- page the directory display up or down, as do also <Q>, <A> to match paging in the Editor itself.
- <space> -- marks the Display/80 file under the cursor bar as the current workfile, as used for LF and SF. In pathname mode, if the cursor bar is on a Sub-Dir entry, it will cause that sub-directory name to be appended to the existing pathname and the catalog is generated for that sub-directory. The altered pathname becomes the current pathname as stored in the <HD> name buffer.
- <T> -- marks the Display/80 file under the cursor bar as the editor temporary file name for LoadTemp.
- <0> -- restores the work- and temporary filenames to those originally existing at the current entry to SD.
- <ctrl-P> -- prints a directory out to the DirectoryPrint device as a DV/80 file in Append mode. This device-name is initialized at load time to be the PrintFile device but is maintained separately after that and is edited by <DP> from the command line (see FWDOC/ED81).
- <P>, <U> -- set the file under the cursor to Protected or Unprotected respectively, but not for pathname catalogs.
- <D> -- deletes the file under the cursor bar, but first asks for confirmation (Y/N). The directory is re-read automatically for confirmation.
- <ctrl-4> -- toggles the Edit mode between 40 and 80 column displays, as indicated in the information box. This is the only way that 40-column mode can be set.
- <enter> -- switches to View mode (see below) if there is already a file in the View buffer.

The file viewing functions have been extended to be similar to <V>view in DiskReview, but are for Display/80 files only. The key functions have been simplified from DiskReview by not having auto-scroll on <ctrl-Q> and <ctrl-A>. The one way scroll of previous Funnelweb editors is still present using <W>. The buffer structure in VRAM matches that of DiskReview <V>view and the Editor entry code checks VRAM for a data structure compatible with this limited case and if it finds any signals it by the name Buffer Recovery, but position markers are not restored. It allows inspection of files very much longer than can be read into the editor, but is limited by available VRAM to about 64 Kbyte (which should handle Geneve My-Word files as well). The contents of the View buffer are also accessible from <V> in command mode. A new set of control keys operates in View mode and are listed after the commands which load View from the directory.

<V> -- reads the first page of the current Display/80 file into the View buffer. The current contents of this buffer are replaced by the Display/80 file under the cursor bar.

<ctrl-V> -- is similar to <V> except that it initiates file input in page scrolling mode.

<W> -- scrolls page by page through files of indefinite length, directly from disk to display without affecting the View buffer contents. Pressing any key then brings in the next page, until EoF is reached or <esc> pressed.

<ctrl-W> -- appends the current Display/80 file to the contents of the View buffer and the name displayed for the buffer contents is changed to "Multiple Files". <ctrl-W> reads the first page and then after the display has started is single page by page only. Use <ctrl-V> after this if autoscroll to the end of the file is desired. Any number of files may be appended for immediate inspection this way up to the maximum capacity of the buffer.

<Q>, <A> -- scroll the View buffer contents up or down by page.

<E>, <X> -- scroll the View buffer contents up or down a line at a time.

<ctrl-E>, <ctrl-X> -- set autoscrolling up or down by lines.

<space> -- in View mode now serves only to pause autoscrolling.

As a last little addition, the SD screen also shows the number of bytes remaining in the text buffer. This includes the effects of buffer encoding and Euro-Writer and All-Chars will give a lower figure than 7-bit modes on the same file. The empty buffer value may change with future revisions, but now is 2 whole bytes larger than the original.

### (3) New Load/Save Functions

The Load/Save module now has code which performs extensive validation tests on incoming tab records from any mode into any mode. Euro-Writer files do not crash this version no matter which mode is being used. Loading and saving of text records bypass DSR search and go directly to the opened DSR for improved speed. A line count is at the upper right of the screen to show progress in loading or saving. Changes under user selection are in the option codes for PrintFile, where the following new options are available.

M -- sets PF to output the file in DisFix/128 TI file format with MS-DOS end of line <cr><lf> separators and <ctrl-Z> end of text marker.

U -- does similarly for Unix format with <lf> separators and <ctrl-D> at end of text. M and U both cancel the L option for line numbers.

P -- if a printer start-up control code sequence has been installed this will be sent to the print device before any text records.

Q -- if a printer reset control code sequence has been installed this will send it to the print device after all text records have been output.

A -- opens the DV/80 output file in Append mode. If it is desired to keep a Tab record in Word Processor mode (Tab records need not be at the end of the file), SaveFile should be used to start the diskfile.

There is no provision for external files in the M or U formats to be read in directly and external conversion programs will be needed to produce DV/80 files first for loading by the Editor. For a quick summary of these and the other PF options see the -PRINTFILE original or the help screen made from it, or else consult the original TI-Writer manual.

### Appendix - Updates and Bugfixes

Updates are only mentioned briefly. For details of new or improved features, see the relevant sections of these document files.

(a) April 1993

- o Updates -- (1) Separate type and language configuration for word processor and program editor.
- (2) Replace String in ASMode now does the ASM syntax checks on altered lines.
- (3) First of further help screen choices (L. Tippett via C. Good).
- o Bug Fix -- (1) Replace String in Fixed modes caused partial lockup of Geneve (not TI99/4A). Code fixed.
- (2) Tab recognizer code blanked last character of potential but rejected tab record. Fixed.
- (3) <ent> from SD to view existing View buffer file failed to set correct char-set in All-Chars mode. Fixed.

(b) May 1993

- o Updates -- (1) User can configure All-Chars tab record sent to file to be either of USA TI-Writer type or Euro-Writer compatible.
- (2) Directory Print from SD in Hard Disk mode now writes the pathname in the header line.
- (3) Files may be appended into the View buffer using <ctrl-W>.
- (4) Directory tree traversal added to HD directory displays.
- (5) More Help screens available for choice.
- o Bug Fix -- (1) As always bug-fixes bring new bugs. RS <All> locked up after the last "fix". The fix is now itself fixed.
- (2) Minor correction All-Char help screen.

(c) July 93

- o Changes -- (1) Command text sources and utility now omitted.
- o Bug Fix -- (1) Appending of files into View buffer fixed after incomplete first file read (stopped with <esc>) or initial line scroll back.
- (2) <ctrl-W> half-view function in SD modified for better user control.
- (3) Minor change in German command text

### THREE COLUMN OUTPUT

by Michael Rittweger  
Reprinted from MICROpendium  
Retyped by Bob Relyea

The following program by Michael Rittweger of Kiel, Germany, can be used for several purposes. What it does is output D/V 80 files in three columns on a page in small type. Each column is 40 characters across. An Extended Basic program saved as a D/V 80 file will be printed in three columns. Similarly, any D/V 80 column can also be outputted in three columns. The printer codes are for use with Epsom-compatible printers. The program requires a memory expansion, Extended Basic and a printer.

The author wrote the program to print sourcecodes. It is called "LISTSMALL". The features of the program are:

- \* It takes the first 40 characters of each line and cuts off the rest (if there is any more).
- \* It sets the linefeed to 1/8 inch to print a maximum of 88 lines per column.
- \* It sets the pitch to 17 cpi to allow printing in three columns with 40 characters each.
- \* It gives the option of printing a header and page numbers. If both options are chosen, there are 80 lines per column left.
- \* It gives the option of to remove REMs (indicated by an asterisk) and blank lines.

The program should work on all printers. The codes used in it are explained in REMs at the beginning of the program.

```

10 !CONTROL CODES USED:
20 ! 27-28 SET LINEFEED TO 1/8 INCH
30 ! 15: SET PITCH TO 17 CPI
40 ! 10: EXECUTE LINEFEED
50 ! 12 : EXECUTE FORMFEED
60 ! 13 : EXECURE CARRIAGE RETURN
100 CALL CLEAR
110 OPTION BASE 1
120 DIM AS$(264)
130 INPUT "FILE: DSK1.":DS$
140 ON ERROR 130
150 OPEN #1:"DSK1."&DS$,INPUT ,DISPLAY ,VARIABLE 80
160 PRINT
170 INPUT "DELETE BLANK LINES?":YNS$
180 FL1=0 :: IF YNS$="Y" THEN FL1=1 ELSE IF YNS$<>"N" THEN 170
190 PRINT
200 INPUT "DELETE REMARKS?":YNS$
210 FL2=0 :: IF YNS$="Y" THEN FL2=1 ELSE IF YNS$<>"N" THEN 200
220 PRINT
230 INPUT "HEADER? ":YNS$
240 FL3=0 :: IF YNS$="N" THEN 260 ELSE IF YNS$<>"Y" THEN 230
250 FL3=1 :: LINPUT "":HEAD$ :: HEAD$=SEG$(HEAD$,1,126)
:: HEAD$=RPTS(" ",INT((126-LEN(HEAD$))/2))&HEAD$
260 PRINT
270 INPUT "PAGE-NUMBERS? ":YNS$
280 FL4=0 :: IF YNS$="Y" THEN FL4=1 ELSE IF YNS$<>"N" THEN 270
290 ON ERROR 660
300 OPEN #2:"PIO.CR.LF",OUTPUT,DISPLAY ,VARIABLE 132
310 PRINT #2:CHR$(15);CHR$(27)&CHR$(48)
320 FOR A=1 TO 264+((FL3=1)*12)+((FL4=1)*12)
330 IF EOF(1)THEN 400
340 LINPUT #1:AS(A)
350 IF FL1=0 THEN 370
360 IF AS(A)=" " THEN 330
370 IF FL2=0 THEN 390
380 IF SEG$(AS(A),1,1)="*" THEN 330
390 GOTO 410
400 AS(A)=" "
410 AS(A)=SEG$(AS(A),1,40)
420 NEXT A

```

```

430 IF FL3=0 THEN 480
440 PRINT #2:" "&HEAD$;CHR$(13);CHR$(10)
450 PRINT #2:CHR$(10)
460 PRINT #2:" "&RPTS("-",126);CHR$(13);CHR$(10)
470 PRINT #2:CHR$(10)
480 A1=88+((FL3=1)*4)+((FL4=1)*4)
490 FOR A=1 TO 87+((FL3=1)*4)+((FL4=1)*4)
500 PS=AS(A)&RPTS(" ",40-LEN(AS(A)))&" ! "&AS(A+A1)&RPTS(" ",40-LEN(AS(A+A1)))&" ! "&AS(A+A1*2)
510 PRINT #2:" "&PS;CHR$(13);CHR$(10)
520 NEXT A
530 A1=88+((FL3=1)*4)+((FL4=1)*4)
540 PS=AS(A1)&RPTS(" ",40-LEN(AS(A1)))&" ! "&AS(A1*2)
&RPTS(" ",40-LEN(AS(A1*2)))&" ! "&AS(A1*3)
550 PRINT #2:" "&PS;CHR$(13)
560 IF FL4=0 THEN 620
570 PRINT #2:CHR(10);CHR$(10)
580 PRINT #2:" "&RPTS("-",126);CHR$(13);CHR$(10)
590 PRINT #2:CHR$(10)
600 PAGE=PAGE+1
610 PRINT #2:" "&RPTS(" ",60)&"- "&RPTS("0",2-LEN(STR$(PAGE)))&STR$(PAGE)&"-";CHR$(13)
620 PRINT #2:CHR$(12)
630 IF EOF(1)THEN 640 ELSE 320
640 CLOSE #1
650 CLOSE #2
660 END

```

EDITOR'S NOTE: I first typed up this program in program format and ran it, sorted out a few typing errors and then listed in to disk as a D/V 80 file (LIST "DSK1.filename") and then finished it up on the word processor. I ran the program a few times and found that it did basically what it claimed to do but I found that it had a bit of trouble when it came across lists. If it was doing a simple, basic, straight-forward D/V 80 file it went OK but it did not get on so well if there were some variations. Maybe somebody could add to it a bit? If anybody requires the above in program format then let me know and I will bring it to a meeting. Bob.

END OF ARTICLE

### WORD PUZZLE

This puzzle was compiled using ASHLEY LYNN'S programme WORD PUZZLE that appeared in last month's magazine.

This month's list of words is based around the subject of (you guessed it) computers.

```

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

```

Find these hidden words

HOW TO PLAY

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

ASSEMBLER	BASIC	CIRCUIT
COMPUTER	CONTROLLER	DRIVE
EXTENDED	FLOPPY	FORTH
INTEGRATED	KEYBOARD	LOGIC
MONITOR	PARALLEL	PASCAL
PERIPHERAL	PRINTER	PROCESSOR
SERIAL	VIRUS	

# FAST FRACTALS

by Malcolm Ellis.

I have written this article to share some techniques that I use to produce, in just a few minutes, graphics that would normally take many hours of calculation. The Mandelbrot Set is a favourite of mine, and I will use it as an example. Using the following method I have reduced a 195 minute process to 20 minutes.

The Mandelbrot Set is calculated by taking a point on the complex plane and iterating the formula  $z^2+c$ . If these iterations lead off to infinity, the point is not in the Mandelbrot Set.

The complex plane can be thought of in similar terms to a normal x-y plane. A point is defined by two numbers. One number is the Real part, the other is the Imaginary part.

Real numbers are the numbers that we normally use, such as 10, -6 or pi. Imaginary numbers came about from the question: what is the square root of -1? A new number called i was made up and is defined as the square root of -1. A number which can be expressed as a real number plus a multiple of the square root of -1 is called complex and is written in the form a+bi. The real numbers we normally use are the same but have b=0.

Therefore, to find whether or not a point is in the Mandelbrot Set, we must set aside a complex variable, z. If the point being tested is c, then we can say:  $c=a+bi$  and  $z=x+iy$ , where z is initially equal to 0. A new z is found through the rule  $new\ z=z^2+c$ , which is:  $x^2+i^2y^2+a+(2xy+bi)i$ . This mess can be cleaned up through the definition of i; i squared equals -1, therefore new z is  $x^2 - y^2 + a + (2xy + b)i$ . So the new x will be  $x^2 - y^2 + a$ , and the new y will be  $2xy + b$ .

Using these formulae, we can go through the complex plane point by point, seeing if each point is in the set or not and displaying the result as a picture on the screen. This is where we encounter our first problem: all these calculations take a VERY long time if we want to use floating point numbers!

To overcome this problem, we can decide to represent floating point numbers as integers, which can be operated on much faster. We pick a number to multiply each floating point number by and store as a 16 bit integer.

The range needed for the Mandelbrot Set calculation is really from -8 to +8 as the largest x or y can be is 2, the term  $2xy$  is the largest, and will equal  $2 \times 2 \times 2 = 8$ . Since the largest signed integer we can store is 32768, we find  $32768/8$  which is 4096. Therefore, to store a 1 in memory, we really store 4096. As I will explain below, the fact that 4096 is a perfect square and a power of two is very useful.

Addition and subtraction of these numbers can be carried out as usual:

$0.7 + 1.2 = 1.9$  is actually calculated as:  
 $2867 + 4915 = 7782$ .

Multiplication involves a little bit more: each number must first be divided by the square root of the factor (in this case 4096). This is why 4096 is a good choice, it is 64 squared, and 64 is two to the power of six, so when it comes time to divide by 64, we can do a right shift six bits, which will be quicker than a division.

As an example:  
 $0.4 \times 1.25 = 0.5$  would be evaluated as:  
 $(1638/64) \times (5120/64) = 25 \times 80 = 2080$ .

Division is not needed for the Mandelbrot Set, but for completion I will include it:

x/y is evaluated as  $(x/(y/64)) \times 64$   
for example:  $1/0.5$   
 $(4096/(2048/64)) \times 64$   
 $= (4096/32) \times 64$   
 $= 128 \times 64$   
 $= 8192$ .

As you can see, we have traded accuracy for speed. When using 4096 as the factor, accuracy is limited to about three or four decimal places, but the calculations are sped up by as much as ten or twenty times.

When calculating the Mandelbrot Set, you have to decide how many times each point will be iterated, and again there are compromises. More iterations will produce a better definition of the features, but will take longer. Generally sixteen iterations is the minimum for seeing a recognisable Mandelbrot Set.

This is the point at which you can introduce colour to the set. Even though a point is either in the set or out of the set, the points near, but outside the set will take different amounts of iteration before the computer decides that they are out. These points can be colour coded depending on how many iterations were done before they were rejected.

A fragment of my C program is included below:

```
int a,b,x,y,n,i, iters;

iters=64; /* number of iterations */

a=-512; /* the point c that is going to be tested */
b=4096; /* this point is -0.125 + i */

x=0; y=0; i=0; /* initial z */

while((x<8192)&(x>-8192)&(y<8192)&(y>-8192)&(i<iters))

{
n=(x>>6)*(x>>6)-(y>>6)*(y>>6)+a;
y=2*(x>>6)*(y>>6)+b; /* OR y=(x>>5)*(y>>6)+b; */
x=n;
i++;
}
```

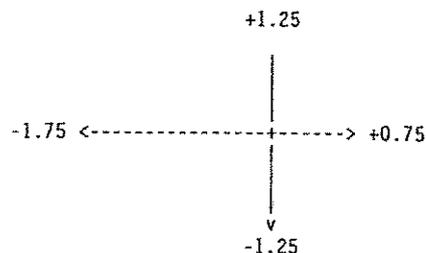
The value for i will indicate the situation of the point c.

If i is equal to iters, then the point is in the Mandelbrot Set, therefore any other value tells you how far away from the set it is.

A simple set of for loops can be used to produce a picture:  
`for(x=-8192;x<2048;x=x+51) for(y=-5120;y<5120;y=y+51) {`  
}  
etc. can be used.

Another point to remember is that the Mandelbrot Set is symmetrical about the X axis, so if you are calculating an area which is symmetrical about the X axis calculate one half and mirror it.

The Mandelbrot Set can be found within the following bounds:

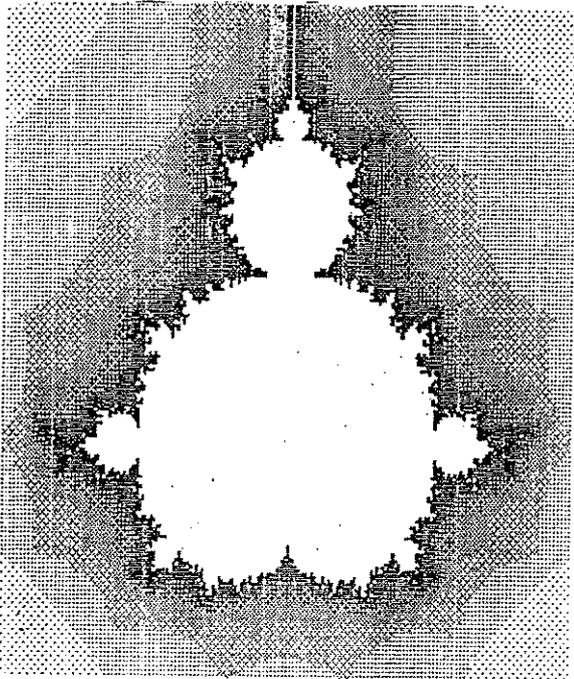


This method allows you to trade some accuracy in the calculations for a significant increase in speed by handling the values in a different way. This process involves the use of integer variables in an unusual but effective way and allows calculations that would normally require slow, floating point operations, to be carried out quickly.

#### BACKGROUND STORY

A series of articles by Stephen Shaw in several 1991 TND's provided a TI focus for my interest in fractal graphics. After running several programs suggested by Shaw, and being a fairly impatient sort, I took up the challenge to shorten the amount of time I have to wait for each picture.

This challenge has led me along an interesting path and has generated more questions. I am currently working on Julia Sets, Diffusion Limited Agregate Simulations and the relationship between Fractal images and nature.



#### EDITORS COMMENTS

By Loren West

#### PLEASE NOTE!! APRIL MEETING 9th APRIL 1994

The February meeting was very successful, there was Peter with his I.B.M. machines in one corner, (the hum of voices blending harmoniously with the music he was producing from one of his programs,) Peter also had some I.B.M. colour monitor's for sale... they seemed very cheap.

In the other corner was Larry with his trusty T.I. converting pictures and demonstrating for all those interested.

Percy was busy every-time I looked into the shop.

Thank you to those people who offered me articles for the TISHUG magazine, and if you have something to say, just put it on a disk and send it in.

Dont forget the date for April meeting is the 9th April.

#### Bits and Bites

March 1994  
By Larry Saunders

Subject: Pix v1.3

Copyright 1989, 1990 by Jim Reiss

Version 1.3 is the sixth shareware release of Pix, a program which implements a 99/4A-specific compact color and two-tone picture storage format. The format is typically faster and more compact than RLE for two color pictures, and the format stores the two colors involved, unlike RLE. This version features display of file size (in sectors) in the catalog disk function.

The specifics of the Pix format have been released and are currently available on various networks and BBSes. In general, it is a format which can be accessed randomly or sequentially and can support pictures with over 4 million pixels. This program is for 256x192 and smaller pictures only, but a commercial program, Pix Pro, is now available from Asgard Software handles larger pictures and more file formats. Contact me for details at the address given in the program.

Pix should load from any E/A option 5 type, It also loads with any of the RAM card loaders or the disk base ROOT loader, and after the title screen it prompts the user for a filename of a picture to display. To catalog a disk, type the disk name with no filename after the period. Pix can display Artist, Graphx, Pix,

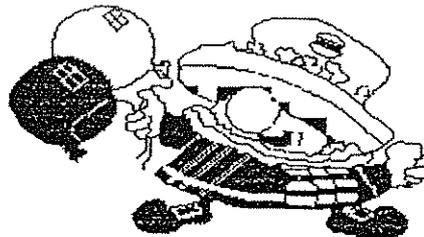
LARRY...CLIPIX ..3..

Pix 128, and RLE pictures. While the picture is on the screen, if it is a two color picture, new foreground and background colors can be scrolled through by pressing F or B, respectively. Any other key brings you to the disposition menu.

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

Users are encouraged to distribute this program freely. Please include this file with the program. If you find this program useful, please send \$10 or what you think it is worth to the address given on the title screen. Fairware payments will encourage further development of this program, as well as future fairware programs. To date only one payment has been received.

Enjoy!



#### VINCENTS CORNER

Congratulations to Leonie Meldrum for entering the software programme competition. You should receive your prize soon.

GAMES INFORMATION  
IBM Edition

#1

By Robert Brown

Welcome readers to our first GAMES INFORMATION article for IBM computers (and sometimes the Amiga, Macintosh, Commodore, Apple etc.). Well I did say that I was multi-talented!

Over the next three (3) months I will be giving you the solutions in the Ultima adventures, 1, 2 3. These adventures are quite old, but were one of the first graphically (good ones) adventures available for the IBM PC.

## ULTIMA I

## Strategy

Strategy suggestions for playing "Ultima I" are presented here, which is divided into five sections: I) The Beginning, II) The Dungeons, III) Space Travel, IV) Saving the Princess, and V) Battling Mondain.

Descriptions of the terrain of the four continents of Ultima are provided at the end of this article and is "Layout."

## I. THE BEGINNING

Once you create your character, and endow him or her with race, type, and attributes, you are ready to begin your adventure. Each race and type of character has its own advantages and disadvantages. Obviously, a fighter is vicious in battles, wizards or clerics throw potent spells, and thieves are good at thievery. Experiment with different characters. Your first step, upon finding yourself in the middle of a grassy plain, is to ready your armor (leather) and a weapon (dagger). Thus prepared, you may then begin to explore the world of Ultima.

You will encounter a number of strange creatures during your travels. On land, you will find Orcs, Evil Treants, Hoods, Knights, Bears, Wandering Warlocks, Necromancers, Hidden Archers, Thieves, Dark Knights, and Evil Rangers. Dvegon \*is likely that Giant Squid, Ness Creatures, you'll be killed quickly. If so, you will be reincarnated. (If you're reincarnated in the middle of water, keep trying to move or attack. These actions will use up your food and hit points, and you'll be reincarnated again -- hopefully on land the next time.) However, your resurrected self is lacking in food, gold, and weapons. Take heart! Although the process of building up your points and possessions seems slow, if you persevere you will "ultimately" be victorious. The following strategy hints should be helpful:

- 1) It is often advisable to avoid combat. Try to run away from an enemy until you can build up your hit points.
- 2) Buy and steal as much armor as possible. If you are killed, you will retain your armor, vehicles, and spells, but you will lose your weapons.
- 3) To increase your gold supply, you can sell some of your armor.
- 4) As soon as possible, descend into a dungeon. By entering a dungeon and killing a number of creatures, you will gain hit points, experience points, and gold (and food, if you're killed in a dungeon). You can do this again and again, building up your character.

5) Always buy a drink from Varg the tavern keep in a pub. He may give you some helpful clues.

6) As you gain experience points, you will find that more advanced weapons and transportation become available in the cities. Items such as pistols, blasters, and phazors are invaluable in battles (in fact, sea creatures will be "out of weapon range" until you get a hold of, at least, a set of bow and arrows). By a strange quirk in the game, you may be able to steal technologically advanced weapons or armor even before they're available for purchase! Use of a vehicle will conserve your food supply during your travels. Seagoing vessels and air cars allow you to visit islands and cross oceans. Once you've obtained a frigate or an air car, you can use its cannons or lasers to fire on enemies. A space shuttle will be required for space travel.

7) When you enter a castle, be sure to transact with the King. If you have sufficient gold, he will sell you hit points. If you offer service, he will send you on a quest for which you will be handsomely rewarded.

8) Save the game frequently. You never know when 7 Hidden Archers or 4 Ness\$Gveetu \*\*

9) Beware of Wenches, Jesters, and Bards. They like to steal your possessions.

## II. THE DUNGEONS

Dungeon experience is vital in order to increase your hit points. It can also be fatal. If your character is a novice, it's best to explore only the 1st or 2nd level of a dungeon. Then you can retrace your steps, climb out of the dungeon alive, and repeat the process. As you become stronger, you can descend deeper into a dungeon. There you will do battle with increasingly powerful creatures, but you may also gain hundreds of hit points and gold pieces. You will encounter the following enemies in any dungeon:

Levels 1 and 2:	Thieves, Rangers, Skeletons, Bats, Giant Rats
Levels 3 and 4:	Giant Spiders, Cyclopes, Orcs, Gelatinous Cubes, Vipers
Levels 5 and 6:	Ettins, Minotaurs, Mimics, Carrion Creepers, Lizard Men
Levels 7 and 8:	Wraiths, Wandering Eyes, Liches, Tangles, Gremlins
Levels 9 and 10:	Daemons, Balrons, Mind Whippers, Zorns, Invisible Seekers

Even if you have accumulated many thousands of hit points, some of the more powerful creatures can easily destroy you. You will have to discover, through trial and error, which weapons or spells you should use against them. (Note: Only a wizard can use the Blink, Create, Destroy, and Kill spells.) The following strategy hints should help you in surviving dungeon travel:

- 1) Use the Inform and Search command frequently. This will disclose traps which you can then avoid (rope and spikes will save you from falling through a hidden trap, but you lose them).
- 2) Use the Destroy spell to dissolve force fields.

3) Use the Blink spell to escape to another place on that level (useful when monsters are attacking from all sides or when you're surrounded by force fields and have no Destroy spells).

Wr\* Destroy spells).

Wr\* Destroy spells).

Wr\* Destroy sp

4) Map each level so you don't get lost. Or, purchase plenty of Ladder Up and Ladder Down spells to allow you to move easily between levels.

5) Remember: You cannot save the game from within a dungeon. Also, you cannot put on any new armor if it has been destroyed (by a Gelatinous Cube, for example).

6) You may wish to use an Unlock spell to open chests, and an Open spell to open coffins. You will find additional gold in these containers.

7) If you are on a quest (to kill a Balron, Liche, Cube, or Creeper), do not dally on other levels. Go straight down to the level where the creature you are seeking lives (using Ladder Down spells), kill it, then get out of the dungeon quickly (using Ladder Up spells). It is very easy to be overwhelmed by enemies on the lower levels, and you could be killed. Gremlins may steal all your food; Invisible Seekers may annihilate you before you can locate them; Mind Whippers may destroy your intelligence with their mental attacks.

### III. SPACE TRAVEL

You have been exploring the four continents of Ultima, crossing plains and oceans, and increasing your attributes and possessions. Suddenly, you find advanced weapons, armor, and vehicles in the cities. Purchase a space shuttle as soon as you have enough gold. The shuttle will carry you out into space where you will strive to destroy 20 enemy vessels. If you do this, you will be designated a "Space Ace." You will want to be a Space Ace before rescuing the princess. If you destroy the enemy spacecraft, and return alive to Ultima, you will have gained thousands of experience points and will be ready to save the Princess. Space movement can be tricky, and the following strategy hints should help:

1) The first view you will see is your shuttle, motionless in space. Nearby is a Base, a Star, and Ultima. You can use your shuttle for continued travel, or you can dock at the base and purchase a different vehicle (500 gold pieces each time you exchange ships). The smaller vehicle has limited fuel, but a lot of shield power. The larger vehicle has plenty of fuel, but negligible shielding. Take the smaller ship since you won't want to go very far from base.

2) Docking with the base in order to save gold \*\* If you do not dock exactly at the entry point in the base, you will destroy your shields and be disintegrated. Try this method: One forward thrust until you are near the base; one retro to stop your vehicle; one left turn or right turn to position your ship in the direction you want to go; one forward thrust to get it moving again; one retro to stop it; etc. In this way, you can slowly and carefully position your shuttle so that you can make a precision docking. Exchange ships.

3) Once you have a new ship, you must do a sector scan. This is accomplished by the Inform and Search command. Note: You will always be in the center of the sector scan. When you start out in space, you will be where the "B" is in the middle of the sector scan. The blank lines indicate empty space, the stars indicate stars, and the carets indicate enemy spaceships.

4) Since you don't want to get too far from your starting point, and you don't want to get lost and run out of fuel, always check the sector scan to make sure you know where you are. If the scan shows enemy ships to the left, turn your ship to the left. If the scan shows enemy ships below you, turn your ship downward. Apply thrust, then go into View change. Now you're in open space. Hit the Hyperspace key. At this point, you will be in a sector containing enemy ships.

5) Once you've destroyed the enemy ships (usually three), go into View change mode again. Stop your ship with one retro. If you went left originally, you'll want to return right. If you went down originally, you must turn your ship upward, and so on. Turn your ship to the appropriate direction, and apply thrust. Change the view again, hit hyperspace again, change the view again. You should be near your origination point, by a base. You can exchange ships again, or return to Ultima. This process can be repeated many times until you become a Space Ace.

### IV. SAVING THE PRINCESS

In each castle, there is a Princess imprisoned. You will see her pacing in her cell in the lower right of the castle. The key to her cell may or may not be in the possession of the Jester (hopping around near the King). You must kill the Jester in order to get the key. Keep trying until you get the correct key that will unlock the Princess's cell. \*\*should assist you in freeing the Princess:

1) You'll notice that the Jester sometimes comes near you as you enter the King's throneroom. Try to get him to stay near the entrance. Then you can kill him, and run (quickly!) down and over to the Princess' cell. Hit "U" to unlock the door. The Princess will follow you out of the cell if the correct key has been used. If you have not obtained the correct key, and the one you have does not unlock the door, follow the instructions below anyway in order to try to escape with your life.

2) The moment you kill the Jester, the guards will be upon you. They are virtually impossible to kill, so your best course is to outrun them. First of all, try to position the Princess between yourself and the guards. This will take a little practice, but eventually you should learn how to line the guards up behind you as you run for the castle exit.

3) Move quickly, being careful not to run into walls, trees, or ponds. One false move, and you'll be trapped between guards. In the far left room, try exiting to the north of the pond, and out left. It's tricky, but possible. As you leave the castle, the Princess will reward you handsomely and will tell you where to find the Time Machine.

### V. BATTLING MONDAIN

Once you rescue the Princess and locate the Time Machine, you are ready to do battle with the evil wizard Mondain. Board the craft and launch. Although you are now an expert fighter (you've done away with Balrons and Liches, right?), Mondain will nevertheless engage you in the battle of your life. The following tactics should help you destroy the Evil Gem, kill Mondain, save the universe and, not incidentally, win the game:

1) You must first destroy the Evil Gem. Immediately approach the gem and hit "G" to get it. This action will destroy the gem. It will also drain away most of your hit points.

2) If you do not destroy the gem immediately, you will not be able to permanently kill Mondain. The Evil Gem that he created makes him immortal, so you must destroy the gem before turning to Mondain.

3) Now, begin to attack Mondain. Kill spells will not work against him; they only make him stronger. Just keep firing away until he weakens. Persist in your attack even though he unleashes an onslaught of spells. If you are a wizard, you can use the Create spell to place a force field in front of you, however, it's best to continue attacking Mondain. Hopefully, he will be weakening. You can tell that this is happening because he changes into a bird and ceases attacking you. Continue firing until you receive the message that Mondain is dead and that you're victorious.

## ULTIMA I

## Layout

The game of "Ultima I" involves travel on land and sea and through space and time. This file is to help you map a dangerous world. The planet consists of four continents separated by oceans. These continents contain many cities, castles, dungeons, and landmarks which the traveler must explore. Once the adventurer has purchased a seagoing craft or an air car, he or she may traverse the oceans with ease. When sufficient gold and experience points are accumulated, a space shuttle may be obtained for extraterrestrial journeys.

### I. CONTINENT ONE

#### 1) Overview

Continent One contains two castles (Lost King and Lord British); eight cities (Yew, Fawn, Britain, Montor, Grey, Paws, Moon, and Tune); nine dungeons (Perinia, Lost Caverns, Mondain's Gate to Hell, Unholy Hole, Mines of Mt. Drash (1 and 2), Death's Awakening, Montor, Doubt); and two landmarks (Pillars of Protection and Tower of Knowledge).

#### 2) Quests

Quest for King of the Castle of the Lost King: The King will ask you to destroy a Gelatinous Cube. To do so, you must climb down to level 3 or 4 of any dungeon and kill a Gelatinous Cube. Having done so, return to the King who will give you a red gem. He will also tell you that you will need four gems to launch the Time Machine.

Quest for the King of the Castle of Lord British: His Majesty will send you to find the Tower of Knowledge. The landmark is located on an island to the northeast of the continent. You will receive additional strength from the King when you complete your quest and return to him.

#### 3) Landmarks

Pillars of Protection: This landmark is located on an island to the northwest of the continent. Enter the landmark, and your agility will be increased.

Tower of Knowledge: The Tower of Knowledge is on an island to the northeast of the continent. Your intelligence will be increased when you enter this landmark.

#### 4) Bartenders' Clues

Pubs: In the cities, there are pubs. Be sure to transact with Varg the tavern keep, since he may give you clues such as: "Destroy the Evil Gem," or "Best watch out for the wench."

### II. CONTINENT TWO

#### 1) Overview

This continent is located across the ocean to the east of Continent One. Continent Two contains two castles (Rondorlin and Barataria); eight cities (Snake, Owen, Gerry, Arnold, Linda, Helen, John, and Wolf); eight dungeons (Scorpion Hole, The Labyrinth, Where Hercules Died, Advari's Hole, The Savage Place, Horror of the Harpies, Gorgon's Hole, and Dead Warrior's Fight); and two landmarks (Pillars of the Argonauts and Pillar of Ozymandias).

#### 2) Quests

Quest for the King of Rondorlin: The King orders you to kill a Carrion Creeper. This dread creature may be found on the 5th or 6th level of any dungeon. When you accomplish your task and return to the King, he will give you a green gem and tell you that you must use the Time Machine.

Quest for the King of Barataria: This quest involves locating the Pillar of Ozymandias (on an island to the southwest of the continent). The King will grant you increased strength upon completion of the quest.

#### 3) Landmarks

Pillars of the Argonauts: The pillars are located on the continent. You are rewarded with various weapons whenever you visit this landmark.

Pillar of Ozymandias: Increased wisdom is your reward for entering the pillar (southwest of the continent).

#### 4) Bartenders' Clues

Pubs: If you buy a drink from a tavern keep, he may give you a hint such as, "Best you should know about space travel, and that you must destroy at least 20 enemy vessels to become an Ace!" or "The Princess will reward you if you save her, and will give an additional gift to a player of 8th level or higher."

### III. CONTINENT THREE

#### 1) Overview

Continent Three is located across the ocean to the east of Continent Two. This land mass contains two castles (Black Dragon and Olympus); eight cities (Poor, Ponder, Clear Lagoon, Gauntlet, Nassau, Wealth, Imagination, and Stout); nine dungeons (The End, The Metal Twister, The Long Death, Viper's Pit (1 and 2), Guild of Death, Troll's Hole, Tramp of Doom, and Slow Death); and two landmarks (Sign Post and Southern Sign Post).

#### 2) Quests

Quest for the King of Black Dragon's Castle: The King orders you to kill a Liche (which may be found on the 7th or 8th level of any dungeon). If you complete this quest, His Majesty will give you a blue gem and tell you that the Princess helps the Space Ace.

Quest for the King of the Castle of Olympus: On this quest, you must find the Sign Post. It is located on an island to the northwest of the continent. The King will reward you with additional strength for completing this task.

## 3) Landmarks

**Sign Post:** This landmark is located on an island to the northwest of the continent. Upon entering the Sign Post, you will receive additional stamina.

**Southern Sign Post:** Additional charisma is your reward for finding this landmark. It is located on an island to the southwest of the continent.

## 4) Bartenders' Clues

**Pubs:** The tavern keep may let you in on the following information: "One thousand years ago, Mondain the Wizard created an Evil Gem which makes him immortal. You must traverse the lands until you find a Time Machine. Go back in time to destroy the Evil Gem and save the universe." Or, the bartender may tell you that "Most, if not all, of the lakes and ponds have magical powers."

## IV. CONTINENT FOUR

From Continent Three, you will arrive at Continent Four. This land mass contains two castles (Shamino's Castle and White Dragon's Castle); eight cities (Lost Friends, Dextron, Turtle, Wheeler, Bulldozer, Gorlab, Brother, and Magic); nine dungeons (Skull Smasher, Doom, Dead Cat's Life (1 and 2), Dead Man's Walk, Hole to Hades, Spine Breaker, The Morbid Adventure, and Free Death Hole); and two landmarks (Grave of the Lost Soul and the Eastern Sign Post). If you wish to revisit Continent One, simply continue east across the ocean from Continent Four.

## 2) Quests

**Quest for the King of Shamino Castle:** You must descend to the 9th or 10th level of any dungeon and kill a Baron. After you do this, return to the King. He will give you a white gem and allow you to take nine items from the holds of his castle.

**Quest for the King of White Dragon's Castle:** You must find the Grave of the Lost Soul (which is on an island to the northwest of the continent). His Majesty will reward you with added strength when you return to him.

## 3) Landmarks

**Grave of the Lost Soul:** Upon reaching this landmark, enter it. You will receive additional stamina.

**Eastern Sign Post:** This landmark merely has a sign saying, "Go east to go east."

## 4) Bartenders' Clues

**Pubs:** Varg may tell you to "Have a strong one, bub," or "Go back in time." Or, he may simply say that this is a great game (as indeed it is!).

Hopefully, you have now completed Ultima I. If you have not, you did not read me article properly... naughty boy/girl... do it again!!! NOW!!

Until next month... and Ultima II !!  
PLO

END OF ARTICLE

## Computer as a print spooler

*I enjoy the magazine, and find trying to make my computer work good therapy. Can you advise me on how I can use my spare '286 machine (with an 80Mb hard disk), as a spooler. (or is that buffer)? I have to print some large files, and I am (typically), impatient to spend my time on the next 'main event'.*

*Clive Robertson*

We're glad to hear you like the magazine. We hope to make it useful to most people most of the time. It sounds like you need some sort of network. Other similar products tend to only let you share the printer between two computers, not buffer it. Artisoft LANtastic is one of the best (and best known), low-end networks, and has a lot of the features of the 'big boys', such as print spooling.

As a bonus, it would also let you access the '286's drive from your other machine (and vice versa) you probably won't need all 80Mb for a buffer. It's available in two variants differing only in speed (2- or 10Mbps), and in the type of cabling used.

I doubt that you'd notice much difference between the two versions (if any), for printing operations, and the limiting factor is usually the speed of the application doing the printing. Unless you plan to expand the network significantly in the future (say, to 10 machines or so), the 2Mbps should do fine for both file and printer sharing.

The Australian distributor for LANtastic is Digital Solutions, (07) 883 1851.



## REGIONAL GROUP REPORTS

### Meeting Summary For MARCH

Central Coast	12/3/94	Saratoga
Glebe	10/3/94	Glebe
Hunter Valley	12/3	19/3/94
Illawarra	08/3/94	Keiraville
Liverpool	08/4/94	Yagoona West
Northern Suburbs	24/3/94	
Sutherland	19/3/94	Jannali

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

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

**HUNTER VALLEY Regional Group**  
The Meetings are usually held on the second or third Saturday of each month at members homes starting at 3pm. Check the location with Geoff Phillips by leaving a message on (049) 428 617. Please note that the previous phone number (049) 428 176 is now used exclusively by the ZZAP BBS which also has TI support. Geoff.

**ILLAWARRA Regional Group**  
Regular meetings are normally held on the second Tuesday of each month after the TISHUG Sydney meeting (next meeting 8th March 1994 ) at 7.30pm, at the home of Geoff & Heather Trott, 20 Robsons Road, Keiraville. A variety of activities accompany our meetings, including Word Processing, Spreadsheets and hardware repairs. Contact Geoff Trott on (042) 29 6629 for more information.

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\* LIVERPOOL Regional Group \*  
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March / April / May  
Regular meeting date is the Friday following the TISHUG Sydney meeting at 7.30 pm. Contact Larry Saunders (02) 644-7377 (home) 34 Colechin St Yagoona West 2199 After 9.30 PM or at work (02) 708-1987 Liquorland Yagoona for more information.

\*\*\* ALL WELCOME \*\*\*  
\*\* NO MARCH MEETING \*\*

8th April 1994  
Subject: Gopher and Page Pro Utils.

13th May 1994  
Subject: To be decided

Bye for now Larry. Liverpool Regional Co-Ordinator.

**NORTHERN SUBURBS Regional Group**  
Regular meetings are held on the fourth Thursday of the month. If you want any information please ring Dennis Norman on (02)452 3920, or Dick Warburton on (02) 918 8132. Come and join in our fun. Dick Warburton.

**SUTHERLAND Regional Group**  
Regular meetings are held on the third Friday of each month at the home of Peter Young, 51 Jannali Avenue, Jannali at 7.30pm. Peter Young.

### TISHUG in Sydney

Monthly meetings start promptly at 2pm (except for full day tutorials) on the first Saturday of the month that is not part of a long weekend. They are held at the MEADOWBANK PRIMARY SCHOOL, on the corner of Thistle Street and Belmore Street, Meadowbank. Cars can enter from Gale Street and park in the school grounds. Regular items include news from the directors, the publications library, the shop, and demonstrations of monthly software.

### MARCH MEETING - 5th MARCH

### APRIL MEETING - 9th APRIL

Due to the long weekend over the 1st, 2nd, 3rd, 4th April

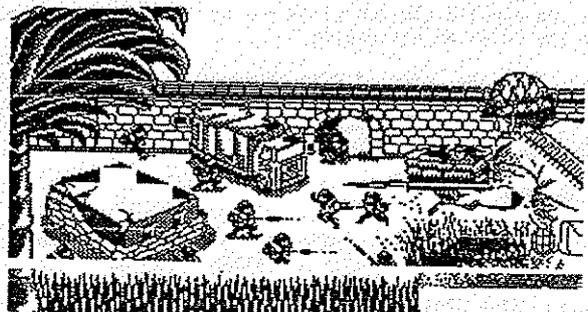
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The cut-off dates for submitting articles to the Editor for the TND via the BBS or otherwise are:

April - 16th April  
May - 14th May

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

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## TREASURER'S REPORT

by Cyril Bohlsen

Income for previous month .....	\$ 637.00
Expenditure for previous month ..	\$ 804.26
Loss for previous month .....	\$ 167.26
Membership accounted for \$ 140.00 of Income.	
Shop sales .....	\$497.00 of Income.
The expenditure was made up of the following	
Printing & Postage of TND .....	\$ 308.50
Administration .....	\$ 117.16
BBS running costs .....	\$ 68.60
Shop stock purchases .....	\$ 310.00