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Happy 8th Birthday

8 YEARS

8 YEARS

8 YEARS

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TIsHUG (Australia) Ltd.

TIsHUG News Digest

May 1989

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Australia

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Membership and Subscriptions

Annual Family Dues $25.00
Overseas Airmail Dues   AUS$50.00

TIsHUG Sydney Meeting

The next meeting will be at approximately 1.30pm on 6th of May at the Woodstock Community Centre, Church Street, Burwood.

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Index

They're Off by Geoff Trott

We had a bit of a delay with last month's TND. With the two days lost over Easter, I was not able to get the Newsletters to the Post Office until Friday. It was not an April Fools' joke after all. This month we are in trouble with contributions. There are too many! What a terrible predicament to be in! We have increased the size and left out the programs which I hope will not upset too many of you. We must thank all those who have provided material. When you consider that we reduce to half the area of the original, it is surprising that there is so much to be said about such a small device. After all these years there is still so much that is interesting and new to discover about the TI99/4A! I am slowly filling up the hard disk with articles to be edited for the future, which means that we will have no shortage of articles for the forseeable future.

Co-ordinator's Report
by Dick Warburton

There are some interesting days ahead for TIsHUG members. Firstly the monthly meetings for May and June promise to be really good. In May, Lou Amadio will demonstrate hardware modifications and projects for members. In June we will have a tutorial day at Woodstock which will reflect the choices of members who reply to Craig's survey. Craig's agenda at this stage includes a range of programming levels, tutoring in important software, and a hardware component. What impresses me about TIsHUG, is the range of talent available in the membership, which is available to us all through club functions, like tutorial days.

It seems to me that the more we join in, and help others, the more we get out of our club membership, and the more we have a go at working on our own projects and systems, the more satisfaction we will get. I still remember that first time my RAMdisk actually worked. I did it myself. Now I have three RAMdisks, and all are being used. How did we ever manage before RAMdisks? I am looking forward to learning how to do all sorts of other things for myself. Apart from the satisfaction of achieving something for ourselves, we cannot rely on others to maintain our ageless TI99/4A .

We do things for ourselves that many other computer groups do not, or cannot do. Many other computer users have their machines repaired at great cost, or buy expensive peripherals which do not allow them the expansion or flexibility which we can achieve. I feel real pride in belonging to such a creative, hard working and self-reliant group of TI99/4Aers.

I have set myself two goals for April. Firstly, I want to see the establishment of some active interest groups. At the April meeting, considerable interest was expressed in attending groups dealing with:

1. Console repairs and hardware modifications.
2. Word Processing
3. Publicising TIsHUG and recruiting new members.
4. TI-Artist.

If you did not attend the monthly meeting, but would like to go to interest groups, then you can do so by contacting the following people.

1. Peter Schubert on 3585602 Consoles.
2. Dick Warburton on 9188132 Word processing.
3. Les Andrews on 6995137 Publicity and new members.
4. Les Andrews TI-Artist.

The other goal I wish to achieve is to visit as many regional group meetings as I can manage in the near future.

Some of our members are coming up with great ideas for the future. Let me list a few.

1. As it seems that we can get reconditioned consoles from Colin Cartwright in Adelaide for $50, Ross Mudie suggests that we keep a few in stock and make them available through the shop to TIsHUG members only. We may recruit new members by doing so. The same principle could apply to mother boards and TI disk controllers etc.

2. Another great idea is the possibility of leasing or hiring consoles and suitable software to people who are willing to join the club. I am sure there are people who would jump at the chance.

3. Ross Mudie wants to run a really effective training session in June, in teaching Assembly language over a two day period, particularly for country members.

4. A few people have suggested swap days for hardware items we do not use. We could invite Newcastle to join us for the day.

5. An ongoing software competition where a prize will be awarded monthly to any work of sufficient merit. This is being planned now, so get your ideas ready and start programming.

6. Closer links with the top US TI99/4A clubs, with exchange of ideas.

7. Purchase of some of the new and exciting Asgard software for sale through the shop.

We need ideas. I want to hear your ideas for improving the club, and for attracting new members. Ring me or drop me a line at 7 Milga Road, Avalon. I will do my best to put new ideas forward.

By the way, Mike Slattery has set up a coffee shop in Ross Street, Glebe. We had part of our Glebe meeting there, and hope to meet there for our Publicity meetings on the second Thursday after each main meeting. Come and help.

A final note regarding the bulletin board. There is a strong possibility of the BBS being upgraded to 1200 or even 2400 baud rate in the near future. I know that everyone would benefit from this if it can be done.

See you soon, Dick Warburton   o

TIMES Software Competition

* Melbourne TIMES *
Competition by courtesy of TIMES
Trophy from Peter Gleed
Co-ordinator, Melbourne User Group.

The Rules.

1. The competition shall be named the TIMES TROPHY.

2. It will be open to all TI99/4A owners who are members of a recognised group.

3. Each user group will be allowed one entry only and it will be their responsibility to choose their entry.

4. The entry may be a program or a piece of hardware. It must be for the TI99/4A. If it works on the Geneve all well and good.

5. There is no entry fee. The Trophy will be valued at about $100. The value of the prize is in the satisfaction of winning.

6. The competition is open to freeware, fairware, commercial ware programs or tutorials. It is also open to hardware modifications to the TI99/4A computer.

7. Programs must be submitted on Disk so that they are readable in TI-Writer or its equivalent. Hardware must be submitted by detail drawings and instructions for building the hardware, it must also be accompanied by details of what it sets out to achieve.

8. Anything published before January the first 1989 is disqualified from entry.
Address for entry is :-
          88 Main Street
          Blackburn, Victoria 3130
          AUSTRALIA

So now go to it and see if you can produce a winner.

Peter Gleed, Co-ordinator, TI99/4A Users Group, Melbourne Inc.   o

Secretary's Notebook
by Terry Phillips

What a good meeting the April event turned out to be. Despite Sydney's continuing wet weekends it was good to see so many members in attendance.

Recently I put all the membership records into a TI-Base data base file and in the process, my fingers, eyes or both must have got a bit tired, for I have been advised of a couple of spelling errors with names. I have corrected the obvious ones I could find, but if yours is incorrect would you let me know please.

This month marks the 8th anniversary of this group's founding. Yes, we have now been going for 8 years. When one reflects back on those heady days of 1981 one realises just how far this group has advanced. If you were told that there was not one disk drive belonging to any member in 1981 would you believe it? Would you also believe that there was virtually no software around in those days? The best we could make do with were some simple text games and a few, by today's standards at least, crude graphics games. Could you believe that there were then approximately 8 members and that 3 still belong to the group? As a final question; is it realised that this computer has been orphaned for longer than it officially existed?

Now reflect on what this group has to offer its members.

1. The best produced and most informative Newsdigest in the TI99/4A community.
2. Probably the most comprehensive software library available.
3. A collection of Newsdigests and other printed material that is second to none.
4. A Bulletin Board that is easy to access and use and provides comprehensive up to date information.
5. Importantly, the feeling of belonging to a group of people with similar interests and objectives.
6. A bunch of dedicated hardware buffs that can come up with what seems unlimited ideas to expand your system.

Summing up, it is still a great group to belong to, and I, for one, will continue to do so.

Let us all welcome some new members, and we should all say a big thanks to Geoff, Rolf and the gang from Wollongong who have been actively sourcing out members.

Here are those who have joined over the past few weeks:

    Karel Kuit - Primbee
    Robert Nichini - Elizaville NY
    Angela Squires - Mount St Thomas
    Chris Sellin - Port Kembla

Anyone else out there who wants to introduce a new member?

Well the Melbourne Group have beaten us this year as they will be holding a Faire during October. Peter Gleed, the hard working Co-ordinator from that group, has told me that a firm booking has been made and that he hopes the venture will be a resounding success. I have written to Peter seeking details and hope that a TIsHUG contingent will be represented. Details, when received will be passed on.

At the last Director's meeting it was decided to seek exchanges with further overseas groups. Those decided upon are the Chicago Users Group, Front Range 99'ers, Mid South 99'ers, Genial Traveller (Barry Traver), and to forward a complimentary issue each month to MICROpendium. All of these publications are highly recommended, so watch for copies in the library. MICROpendium, of course, is available monthly through the shop.

Membership fees are starting to roll in, so it looks like the year ahead will be a good one from the point of view of membership numbers. A reminder if you have not yet renewed, do so quickly and avoid missing out on any issues of the Newsdigest.

Sadly, member Barrie Stevenson, has written to advise he will not be renewing his membership this year. Barrie, having satisfied his curiosity with computing, is now turning to other recreation pursuits. He has a good deal of printed material, including back issues of the Newsdigest, some old tape software, Extended BASIC module and manual, Personal Record Keeping module and manual and 3 TI99/4A transformers that he wishes to dispose of. If you have a need for any of this material please see me.

Member, Michael Ball, has written in the following vein:

    Wanted: I have a standard TI99/4A with a stand alone RS232/PIO interface and I want to purchase a stand alone disk drive and controller together with a 32K memory expansion. I would consider a PE Box with the above.
    Anyone who can help Michael out can write to him at 28 Bedford Street, RANAS Nowra, NSW 2540.

Robert Barrois, from Green Point, has written to say how much he appreciates the first class quality of the Newsdigest.

Rex De Mouilpied, of Coffs Harbour has written expressing a similar view as Robert. Rex also has a problem with I/F 128 type files that he thinks are archived but his archiving utility rejects them. Rex, if you would like to send down a couple of the sample files on a disk we can have a look for you.

Terry Raftery, of Berry, has also written with compliments. Terry says that the receipt of the monthly Newsdigest is worth every cent of the membership fee and that the standard maintained is a credit to all concerned.
    I think Terry echos all our sentiments there.

That is it for this month. Do not forget to check out the local and overseas Newsdigests that have arrived in recent months and are now in the library.

But before ending here is a rundown on forthcoming main meeting activities:

May 6 Normal meeting with an approximate 1.30pm start.
    This meeting will see TIsHUG's Technical Co-ordinator exhibit some of the technical projects shown in the TND over the past 12 months. A demonstration of TI99/4A hardware, past and present, will also be given. As usual, shop facilities will be available and coffee/tea served during the afternoon.

June 3 Full day tutorial workshop day with a start at 10am.
    This will be a big day with lots of planned activities. In line at the moment are Extended BASIC for beginners and intermediates, how to use various items of software, hardware projects and software copying. More details will be published as we near the big day.

July 1 Normal meeting with an approximate 1.30pm start.
    Topics and agenda have yet to be finalised for this meeting. Information will be provided when available. o

Happy 8th Birthday

Techo Time

with Lou Amadio

At the May 1989 meeting you will have an opportunity to see some hardware projects which have been built over the past 12 months. These include:

1) Multi Function Modules
2) Super Module with 32 Kbyte RAM
3) Analogue joystick
4) Console RAM - 8 bit 16 bit .
5) Monitor interfaces - video, RGB
6) Console internal Extended BASIC option
7) Console reset switch
8) Cassette volume level monitor
9) Console Load Interrupt Switch
10) Cooler running console
11) Autotransformer for PEB
12) Quieter PEB fan
13) Stand alone disk drive
14) Hard Disk with power supply
15) Mechatronics 80 column card
16) RGB monitor
17) Myarc Hard and Floppy Disk Controller card
18) Right angle console I/0 connector

It may also be possible to demonstrate the 80 column versions of TI-Writer (Funnelweb) and Multiplan.

Club members who have made their own hardware modifications, please contact me (Lou) at the meeting or leave a message for me on the BBS. You may also like to display these at the May meeting.

Hardware Hints

1) The modification to reduce heat build up in the console by inserting a power resistor in the power supply circuit also calls for mounting a filter capacitor on the console power supply PCB. When mounting this capacitor, remember that the PCB has plated-through holes. This means that if you drill through the soldered "holes" on the board, you should solder the capacitor leads on BOTH sides of the PCB to ensure proper continuity of the +12V supply.

2) Ordinary dry cell batteries are suitable for RAMdisk operation for a fraction of the cost of Nicad batteries. You can expect the dry cells to last their normal shelf life, but remember that you must insert a diode (1N4148) in series with the batteries otherwise the RAMdisk power supply will try to charge them with the possibility of an explosion!

3) Members who are lucky enough to have a Myarc HFDC card should follow Ben Takach's advice and reduce the input voltage to their PEB. It is also advisable to remove the HFDC card from its plastic case and install it into a TI disk controller metal case. This will proved an additional heat sink for the HFDC power regulators. You will have to break of one of the metal tabs inside the metal case in order to fit the Myarc card.

4) For those who are having trouble with the operating system on their RAMdisk, remember that you can install an EPROM version of the ROS which is virtually impervious to power glitches. A special version of the Menu program is required for the ROS in EPROM.

Things to Come

Geoff Trott has been thinking of designing a GROM emulator circuit. The circuit (using EPROMs) can be made to emulate any module with the added advantage that the program will run faster. Sounds great for Multiplan, which is slow at the best of times. Let Geoff know if there is any interest in this device. (I have to find the time somehow! ED)

Overseas Hardware

A very interesting PCB is being developed by Eric Zeno (West Penn 99ers). The card, called "The Zenoboard", allows Extended BASIC, 32K, speech, clock, parallel port as well as provision for additional GROMs, all inside the console. Price has been quoted at $US15. Sounds like a bargain.

Changing to Second RS232/PIO Card
by Geoff Trott

It is possible to run two PE box RS232 cards at once but one must be modified to respond to another CRU address (>1500). This is done by changing the position of a resistor on the board. First you must unscrew the four screws which hold the metal case together and take out the two wire handles from the top. Then the shell may be separated and the printed circuit board removed. The resistor (100 ohms), is labelled R5 and is just below U15 with a label PTH1 below it. The resistor should be taken out and moved down to the two adjacent holes. There are also two wire jumpers on the right side of the board labelled W2 and W3. These should also probably be moved to PTH2 and PTH3 respectively if the board is to be used with the Geneve, as this changes the code returned on interrupt acknowledge. This is not used on the TI99/4A (and I am not sure if it is used on the Geneve either but it does not hurt to be sure).

Please note that you cannot use the second RS232 without making at least the first modification and once modified it cannot be used on its own again without changing it back. Perhaps a switch on the back of the shell would be a good idea. A single pole double throw switch is all that is required to switch one end of the resistor R5 from 0 volts (first card) to +5 volts (second card).   o

Getting your money's worth?

by Rolf Schreiber

As TIsHUG's treasurer, it is up to me to pay the expenses incurred by the Club each month. One recurring expense is the cost of producing our Club magazine, the TND. I hope that all of you appreciate and value the information contained therein, but I believe that few of you know the real cost of producing that publication each month. The current print run of 285 copies costs about $485 per month, or $1.68 per copy. Add to this the cost of the envelopes and postage 11 times a year, and you do not get much change from your $25 subscription fee! Include the hidden costs of magazine production such as the cost of the printer ribbons (at $20 each), glue sticks (about $4 each) and paper, as well as the bonuses over and above the basic 11 issues promised, such as an extra issue in January ($0.90/copy) and a bumper issue in February this year ($2.25/copy) and the all up cost soars above the $25 mark. The directors have been aware of this cost spiral for the past two years, but each year have agreed not to increase membership fees.

The time has come to ask yourself if you get value for money belonging to TIsHUG and in regularly receiving the TND. If the answer is yes, then renew promptly since we need the money now. Also encourage other TI99/4A owners that are currently not members to join TIsHUG themselves. Remember, we cannot produce a publication of the TND's standard without paying the price, and with a dwindling membership every member we now lose adds significantly to the cost per issue of the remaining members. If you want the TND to survive then ask yourself what you can do for TIsHUG, not what TIsHUG can do for you (since we already know the answer to that question!)   o

Renew Now!

TIsHUG Software Column

by Terry Phillips

As mentioned last month the group has come to an agreement with Jim Peterson, Tigercub Software, to market his range of software through the club. All Jim's software has now arrived, been safely un-archived and is ready for purchase. Here is what is available:

    NUTS & BOLTS DISK 1
    NUTS & BOLTS DISK 2
    NUTS & BOLTS DISK 3

These three disks each contain over 100 subprograms and are ready for you to merge into your own programs, and as Jim says, do all kinds of wonderful things.

The cost of each disk is $15. The disk is distributed as a flippy with full documentation on the reverse side. If you have not got a printer to produce the documentation yourself, then a hard copy can be provided.

    NUTS & BOLTS DEMONSTRATION 1
    NUTS & BOLTS DEMONSTRATION 2

These are ideal companions to the main NUTS & BOLTS disks. Will give you some idea of just what can be done. The cost of each disk is $5

    TIPS FROM THE TIGERCUB #1
    TIPS FROM THE TIGERCUB #2
    TIPS FROM THE TIGERCUB #3
    TIPS FROM THE TIGERCUB #4
    TIPS FROM THE TIGERCUB #5

You have all read Jim's Tips column in the Newsdigest but like most of us the thought of keying in all that good material is something we would rather not think about. Well now you do not have to. These Tips disks, which contain Tips 1 through to 52, have all the programs on them ready to load in and run. Excellent value as the cost of each disk is $10

COLLECTION DISKS 1 TO 18: yes there are 18 disks in this collection with each disk containing original and unique entertainment, educational and utility program. Not only that but the disks also have an assortment of better public domain programs to fill them up.

The cost of each disk is $5, and here is what is on these disks.

COLLECTION 1 (TIGERCUB'S BEST) - Alley Craps, Whitewater Run, Scrum, Haunted Graveyard, Four in a Row, Bomber, Cat and Mouse, I'm Lost, High Jump, Mr Kroaker, Leaper, Left/Write, Mazzo, Motorcycle Jump.

COLLECTION 2 (PROGRAMMING TUTOR) - Handy Dandies 1, 2 and 3, Color Programming Tutor, Music Programming Tutor, Sprite Editor.

COLLECTION 3 (PROGRAMMER'S UTILITIES) - Random Char Generator, Sort Test, 4X4 Bit Graphic Utility, TC Graphics Designer, 4X4 Bit Doodler, Sound Maker, Catwriter, Compactor, Compare, Cross Reference Lister, Disklister, Disk Memory Check, Download Convertor, Extractor, Go-Search, Line Edit, Single Pixel Drawing, Tigercub Quickloader, Shrink, Sprite Editor.

COLLECTION 4 (BRAIN GAMES) - 3 Coin Puzzle, Reverso, Bassackwards, Pick up Sticks, Vega, Match a Patch, 3D Tic Tac Toe, Acme Hotel, Checker, Deliver the Cake, L-Game, Mastermind, Othello, Color Squares.

COLLECTION 5 (BRAIN TEASERS) - Missionaries and Cannibals, Election, 4X4 Puzzle, Towers of Hanoi, 3 Buckets Puzzle, Old Timer Puzzle, Preachers and Lawyers, 15 Puzzle, Hexapawn, Indians, Last Robot, Mouse in a Maze, Queen Board Game, Rotate, Shoot the Stars.

COLLECTION 6 (BRAIN BUSTERS!) - Can of Worms, Rithmatik, Long Division Cryptos, Nimbo, Glunk, 100%, Addition

Magician, Arithmagraphs, Digitron, Going Home, Gomoku, IQ Math, Tigercub Math Puzzle, Mawari, Mutiplication Madness, One Check, One to Five, Sphinx.

COLLECTION 7 (MANEUVERING GAMES) - Planetary Defence, Getaway, Sheep Dog, White Knight, Bars and Balls, Ghamur, Artillery Battle, Bowling, Romeo and Juliet, Sky Rescue, Versailles, Zanquest.

COLLECTION 8 (ACTION GAMES) - Rookie Outfielder, Pillbox and Tanks, Mice in a Maze, Fireflies, Runaway Pig, Gleep Shoot, Antares, Aussie Fighter, Balloons, Beetle Walk, Bridge Guard, Chicken, Indy 500, Invasion, Lily Padder, Patscram Mission.

COLLECTION 9 (REFLEX AND CONCENTRATION) - Nervous Breakdown, Jelly Beans, Memory Sharpener, Quick 'n Think, Simon Says, Bingle, Air Rescue, Air Defence, Air Traffic Controller, Arrow Zap, Attacker, Bat Attack, Bonkers, Adventure with Dracula, Egg Wars.

COLLECTION 10 (TWO-PLAYER GAMES) - Snerk, Golden O's, Dry Gulch, Midnight Trail, Ranch War, Golf, Home Runs, Isolation, Game of 1 or 2.

COLLECTION 11 (KID'S GAMES) - Butterfly and Flowers, Tirkle, Slinky, Pot of Gold, Wawaland, Kwik Draw, Marksman, Miss Muffet, Auto Mouse Maze, Pi-Ring Squad, Ribbet, School Daze, Shape Art, Turtle Hop.

COLLECTION 12 (MORE GAMES) - Lost Plane, Andromedan Invasion, Bunny and Beagle, Columbus Pinball, Drunken Sailor, Sub Hunt, Compu-Golf, Crazy Cliff, Diamond Drop, Super TI Dogfight, Homebound, Insanity, Knock Out, Tigercub Sprite Chase, Worms and Spiders.

COLLECTION 13 (WORD GAMES) - Hieroglyphy, Scramble, Scrambulation, Squinch, Bazoo, Changeroo, Word Search, Anagrammer, World Currencies, Natural Elements, Nations of Europe and Africa, Falco's Hangman, Miller's Hangman, Word Game.

COLLECTION 14 (ELEMENTARY MATH) - Six Bones, Kindermath, Number Guessing, Kindertimes, Kinderdivvy, Kinderminus, Kiddy Counter, Add and Carry, Basic Addition and Subtraction, Add-ed, Be a Clown, Color Math, Be Fruitful and Multiply, Elementary Math, Multiplication Practice, Take Away.

COLLECTION 15 (MIDDLE/HIGH SCHOOL MATH) - Homework Helper, Fractions, Mental Math Practice, Roman Numbers, Casting out 9's, Math Baseball, Catapult Capers, Decimal to Fraction, Science Friction, Co-ordinate Geometry, Long Division, Magic 9's, Math Quiz, Russian Multiplication.

COLLECTION 16 (VOCABULARY AND READING) - Hangman Plus, Synonymy, Speeder Reader, I and E Spelling, Homonymy, Antonymy, Junior Speeder Reader, Adjective to Adverb, Learning to "ing" It, Animal Multitudes, Nations of America, Noun to Adjective, Plural Endings.

COLLECTION 17 (MUSICAL EDUCATION) - Tune Picker, Tone Test, Musical Note Recognition, Name that Tune, Musical Scales, Tigercub Keyboard Organ, Intervals, Invention in D Bach, Invention in F Bach, Music Maker, Rhythm.

COLLECTION 18 - Million Mirages, Kaleidovision, Jewels on Velvet, Multivision , Optical Illusion, Ten Thousand Sights, Andrew's Sprites, Aurora, Box Art, Color Burst, Color Squares, Color Visions, Columbus Gen of the Ocean, Escher Art, Eternity, Fascination, Hypnosis Pattern, Kaleidosquares, Patches, Quick Kaleidoscope, Snowfall on Ganymede, Tigercub Sprite demonstrations.

As there are so many of these disks it is impossible to copy them all and take along to the shop. The best way around this, if you wish to purchase any, is to give me an order, and either have the disks posted or pick up at the following meeting. I will be available to take orders at the next and subsequent meetings.

Here is a rundown on new disks added to the library since my last advice:

LIBRARY DISK No. A308 Tigercub Disk - Prescanner, Singing TI with Text to Speech, Public Domain Catalog, TIMP Print. (This disk was available at the last meeting) LIBRARY DISK No. A309,A,B and C Public Domain Music - some great musical numbers with excellent graphics. Most on other disks in library but now on single collection disks.

LIBRARY DISK No. A310, A, B and C Public Domain Music –
 more good music and graphics.
LIBRARY DISK No. A311, A, B and C Public Domain Music –
 More.
LIBRARY DISK No. A312, A, B and C Public Domain Music –
 Yet more.
LIBRARY DISK No. A313 LA99'ers Disk – Catalog of
 programs held by the Los Angeles User Group. (This
 disk was available at the last meeting) LIBRARY DISK
 No. A314 Stephen Shaw Disk – news on the local TI
 scene from the UK. Copy of this disk to Editor to
 reproduce most items. Some will also appear on the
 BBS.
LIBRARY DISK No. A315 Melbourne UG Disk – disk from
 Peter Gleed, Co-ordinator, Melbourne UG. Disk
 contains articles from last issue Melbourne TImes
 plus cashbook Multiplan sample files.
LIBRARY DISK No. A316: Tigercub Disk – Tips #55, #56
Public Domain catalog plus file
 on User Group addresses.
LIBRARY DISK No. A317: Electrical Engineering – package
 produced some years back by TI.
LIBRARY DISK No. A318: Finance Management – package of
 financial aids from TI.
LIBRARY DISK No. A319: Graphing Package – TI graphing
 and plotting routines.
LIBRARY DISK No. A320: Math Routine Library – TI
 package Fourier, Functions etc.
LIBRARY DISK No. A321: Minimate V1.1 – Utility for use
 with mini-memory. Loading, saving etc.
LIBRARY DISK No. A322: GPL Manual – Part 1
LIBRARY DISK No. A323: GPL Manual – Part 2
LIBRARY DISK No. A324: GPL Manual – Part 3
LIBRARY DISK No. A325: Teach Yourself Extended BASIC –
 Tutorial from TI.
LIBRARY DISK No. A326: Checkbook Manager – Financial
 aid from TI.
LIBRARY DISK No. A327: Personal Financial Aids –
 Amortization, Depreciation and Mortgage package from
 TI.
LIBRARY DISK No. A328: Basketball Statistician –
 package from TI.
LIBRARY DISK No. A329: Peter Pan – Walt Disney module.
 Planetary quiz to rescue Wendy. Requires super
 module.

 I am advised of a collection of assembly disks
originating in Holland, by E P Rebel, together with a
further disk which has a fabulous display screen of
rotating planets. Copies of these disks have been
sought and should be here soon. Remember the Grog maze
game which originated from Italy. I am advised that
there is a new version out, updated by Ray Kazmer, who
has designed some great graphic demonstrations. A copy
of this is also being sought.

 I have nothing specific in mind for release through
the shop at the May meeting. If you want any of the
above, or anything else that can be distributed through
the library, see me at the meeting. If you would like a
disk or hard copy of the complete software library let
me know. o

TI-Artist upgrade

by Larry Saunders

 Chris Faherty, author of TI-Artist, is reportedly
working on a new version of that very popular drawing
package. While nothing solid has been heard about its
capabilities, supposedly it will allow you to have a
work area larger than the screen, and have more advanced
drawing and font functions. Chris may have been
encouraged to continue developing TI-Artist by the
tremendous success of his father with TI-Base, or
perhaps by more recent programs such as JoyPaint 99 and
Picasso, which offer many functions not found in
currently available versions of TI-Artist. No word on
availability is at hand, but further information might
be obtained by contacting Texaments. o

TIsHUG Software

Awards

by Geoff Trott

 Software is the life blood of our computing and one
of the main reasons for the continued existence of
users' groups. If that is a reasonable statement, then
users' groups should be doing all they can to encourage
people to write software. One way of doing this is to
offer encouragement to software authors by way of some
financial reward for their efforts. At the last
directors meeting it was agreed that there should be a
software competition and it was my suggestion that it
should not take the normal form, so I have been
delegated to announce the form that it will take.
Before I lay out my "rules", I would like to set some
background to explain my suggestion.

 It seems to me that there are at least two types of
programmers, the creators and the craftsmen. The
creators are the ideas people who come up with an idea
for a program for a particular purpose, be it a new
game, a utility or something grander like a new
language. They know what they want the program to do
and attempt to get it to do that in whatever language
they are most familiar with. The craftsmen, on the
other hand, like to take an existing program and adapt
it to their own needs or find out how it works or
rewrite it in another language to increase its speed or
usefulness. Rarely, one person is able to do both jobs
well and produce an outstanding program on their own.
What I would like to see is the talent that is in the
group being brought together to produce quality software
for the use of all. We should be able to produce at
least one piece of software each year which we can
proudly offer to the world wide TI99/4A community for
their use and perhaps make a bit of money for the author
and the group in the process.

 Problems with a normal software competition are
that it has a deadline and there is usually only one
winner. This means that there are many potentially good
pieces of software whose authors are not rewarded and so
their efforts probably then are forgotten. Everyone who
writes software which has the potential to be
"commercial" should be encouraged and rewarded for their
efforts, whenever they do it. So I propose that authors
be invited to submit their software to TIsHUG at any
time, for judging by a panel of eminent people, who will
award a prize to those authors whose software is
considered to offer sufficient promise of being
"commercial". The winners would then be asked if they
would like help from the craftsmen in the group to make
their software suitable for the world market by testing
it on the whole range of hardware, speeding it up,
writing the documentation, making sure all the bugs are
removed and anything which the judges feel needs to be
done to it. The product could then be circulated to all
the regional groups for their comments, announced to the
world in the TND via reviews and so on and then released
to an expectant world. Well it is worth a try anyway!

 So with that in mind, here are the rules for the
TIsHUG Software Award.

1. A prize from $5 to $50 will be awarded for any
 original software which the judges consider could be
 a commercial product.

2. Any member of TIsHUG can submit software for
 consideration. The software must be either on disk
 or cassette and accompanied by complete instructions
 on paper (as well as disk if possible).

3. All software will be considered for an award and the
 authors of any software which shows sufficient
 promise will be offered the help of the group to
 market it on behalf of the author or TIsHUG.

4. Any money earned from the sale of software will be
 shared by the author and TIsHUG. o

Assembler Tutorial Weekend
by Ross Mudie

I propose to conduct a Beginners' Assembly Tutorial over the Queen's Birthday weekend on Saturday 10th June and Sunday 11th June 1989. The two day course would be a hands on course with a limit of 12 participants. The course would be ideal for country members who are having trouble getting started in understanding TMS9900 assembler language on the TI99/4A home computer. The course is proposed to be both intense and effective.

To allow members to travel to Sydney, it is proposed to start with an introduction at 11am on the Saturday, and to wind up the course late on Sunday afternoon, which would allow participants to travel home on the public holiday Monday. It is proposed that meals be catered for the course participants by Sydney TIsHUG members thus there would be some cost involved and it is hoped that visiting country members could be billeted in the homes of members reasonably close to the course location.

Participants would be required to bring and set up their own TI99/4A system with 32K memory one disk drive (minimum) although if some members were coming by air or public transport then it may be possible to arrange for systems to be made available for these people.

Proposed agenda:

Saturday 10th June 1989.	Sunday 11th June 1989.
10am Commence setting up.	9am Session 4
11am Introduction to course.	10.30am Morning Tea
12noon Lunch and any final or late setting up.	11am Session 5
	1pm Lunch
1pm Session 1	1.45pm Session 6
3pm Afternoon Tea	3.30pm Afternoon Tea
3.30pm Session 2	4pm Session 7
5.30pm Evening meal	5pm Pack up.
7-9pm Session 3	6pm Evening meal
	7-9pm TI ehancement product display.

I feel that the course would not be worthwhile with less than 6 participants and any more than 12 to 15 would pose problems with regard to class size and the ability to adequately attend to people's individual problems. The proposed location is in a school where a class room and a staff room would be used. The proposed catering would be at a modest level by Sydney members to contain costs at an affordable level. The course would cover using the TI Editor Assembler package (or Funnelweb) to create a source file and to assemble the code to produce a working object file. The course would include structure of the assembly language, memory usage, linking from BASIC and Extended BASIC in addition to pure assembly. Implanting methods for assembly inside Extended BASIC would also be discussed.

The reason for proposing to hold the course over two days is simply to attempt to break down the learning barrier that so many people (myself included), suffer when it comes to initially understanding the concepts of assembly and to make it practical for some of our out of Sydney members to gain some additional benefit from the club. Interested Sydney members would be encouraged to fill positions in the course not filled by the close date. It also provides an ideal opportunity for country members who are geographically isolated from other TI99/4A users to meet with other members.

Well how about it? This idea stands to benefit our club in learning for otherwise distance disadvantaged members and in the social interchange between city and country members. It means some hard work for me in preparing and presenting a meaningful course, a task that I will enjoy if all goes well. The support of a number of other Sydney members is essential to share the support work load and to make the social side of the weekend successful. The "TI Enhancement Product Display" will allow the viewing of new and unusual peripherals for the TI99/4A.

Want to discuss the is idea or book in? Contact Ross Mudie at work (8am-3pm) (02)663 0171 or home (7pm-9pm) (02)456 2122 or TIsHUG Co-ordinator Dick Warburton (7pm- 9pm) (02)918 8132. Obviously to make this idea work it needs a lot of support, will you be in it?

The closing date will need to be 1st June 1989, with bookings for the course taken on a first in basis. No costs are available at the date of preparation of this file but should be worked out by the time that it is published.

At this stage the venue will probably be at a school at a school in the Ryde area. Help is needed to organise billeting and transport for those members who come from the country, while someone will need to help out in organising the catering over the two days. I cannot do it all on my own. I need help. Give me a ring if you can help out in any way, or have any ideas about the catering.   o

MCOPY
a disk drive saver
by Tom Arnold, Hamilton, Canada
Courtesy of Channel 99 users group
Hamilton, Ontario, Canada

MCOPY is a disk copier written by Mike Dodd for both the TI99/4A and the Geneve. It runs from just about any mode: Editor Assembler option 5, Extended BASIC, TI-Writer, Funnelweb, MDOS, Gram Cards, you name it.

So what? We have lots of disk copiers many of which are much faster. True, but this copier is not really a copier in the true sense of the word. Mike maybe should have called the program Disk Arranger or Disk Optimizer. That is what the program really does.

I read an article by Mike in the LA TopIcs in which he complains that too few people have sent donations (yes it is Faireware). The cause of this may be that few people understand just what the program accomplishes. Its real purpose is to re-arrange the disk index which is on sector one so that all the programs are listed in alphabetical order. In addition the File Descriptor Records (FDR) are re-written to the front of the disk in order. This is done by copying the programs as they are listed. The disk is not copied sector by sector but program by program in alphabetical order. You could do this yourself by copying programs singularly and keeping track of the order but that would be very time consuming. What you land up with is a sector #1 as shown in Sample #2-:(B). Notice that all the programs (as indicated by the sector numbers) are in order (the numbers tell the computer where to find the FDRs). If you look in Sample #1 (A) which is the original disk sector #1, you will note that none of the numbers are in order. For example in the upper left hand corner the number "0002" is listed, you would expect to see "0003" beside it but it is not. Also as programs are added to the disk the File Descriptor Records (FDR) are not always placed on the front of the disk in the first bunch of sectors. The second program listed of the disk has its FDR in sector 046B. The computer has to do a lot of searching to find this program.

What is this all mean you say? Well by placing everything in order at the front of the disk you end up with faster access time and a lot less head stepping of your disk drives. My drives make one hell of a lot of noise I have noticed when a disk with a lot of files on it are catalogued, copied, loaded etc.. The time it takes and the wear and tear on my disks is reduced greatly.

Publications Library Report

with Warren Welham

As you can probably see, there is a long list of new books which have arrived and therefore the time I normally spend putting new overseas magazines in the library I have spent processing these books. Do not worry, other clubs are still sending their magazines to the library, I just have not had time to enter them into the library. Oh well, on with the list.

Code	Title	Author
00325	Addition and Subtraction 1	T.Instrument
00326	Addition and Subtraction .1	T.Instrument
00327	Addition and Subtraction 1	T.Instrument
00328	Addition and Subtraction 2	T.Instrument
00329	Beginning Grammar	T.Instrument
00330	Beginning Grammar	T.Instrument
00331	Oldies but Goodies-Games 1	T.Instrument
00332	Munchman	T.Instrument
00333	Multiplication	T.Instrument
00334	A-Maze-Ing	T.Instrument
00335	Star Trek	T.Instrument
00336	Early Learning Fun	T.Instrument
00337	TI-99/4A Printer Instructions	T.Instrument
00338	Electronics-it's easy Vol.1	P.Sydenham
00339	Electronics-it's easy Vol.2	P.Sydenham
00340	Electronics-it's easy Vol.3	P.Sydenham
00341	Softex Vol.1 No.1 Nov.83	D.Thomas
00342	Softex Vol.1 NO.2 Jan.84	D.Thomas
00343	Softex Vol.1 No.3 May.84	D.Thomas
00344	Softex Vol.1 No.4 Sep.84	D.Thomas
00345	Softex Vol.1 No.5 Dec.84	D.Thomas
00346	Softex Vol.1 No.6 Mar.85	D.Thomas
00347	99'er HCM Vol.2 No.13 Nov.83	HCM
00348	99'er HCM Vol.2 No.12 Oct.83	HCM
00349	99'er HCM Vol.2 No.11 Sep.83	HCM
00350	99'er HCM Vol.2 No.9 Jul.83	HCM
00351	Home computer Mag. Vol.4 No.1	HCM
00352	Home Computer Mag. Vol.4 No.2	HCM
00353	Home Computer Mag. Vol.4 No.4	HCM
00354	Home Computer Mag. Vol.4 No.5	HCM
00355	Home Computer Mag. Vol.5 No.6	HCM
00356	Home Computer Mag. Vol.5 No.3	HCM
00357	Home Computer Mag. Vol.5 No.4	HCM
00358	Home Computer Mag. Vol.5 No.5	HCM
00359	The Home Computer Course No.1/2	Orbis
00360	The Home Computer Course No.1/2	Orbis
00361	The Home Computer Course No.3	Orbis
00362	The Home Computer Course No.3	Orbis
00363	The Home Computer Course No.4	Orbis
00364	The Home Computer Course No.4	Orbis
00365	The Home Computer Course No.5	Orbis
00366	The Home Computer Course No.6	Orbis
00367	The Home Computer Course No.7	Orbis
00368	The Home Computer Course No.7	Orbis
00369	The Home Computer Course No.8	Orbis
00370	The Home Computer Course No.8	Orbis
00371	The Home Computer Course No.9	Orbis
00372	The Home Computer Course No.10	Orbis
00373	The Home Computer Course No.10	Orbis
00374	The Home Computer Course No.11	Orbis
00375	The Home Computer Course No.11	Orbis
00376	The Home Computer Course No.12	Orbis
00377	The Home Computer Course No.13	Orbis
00378	The Home Computer Course No.14	Orbis
00379	The Home Computer Course No.14	Orbis
00380	The Home Computer Course No.15	Orbis
00381	The Home Computer Course No.16	Orbis
00382	The Home Computer Course No.17	Orbis
00383	The Home Computer Course No.18	Orbis
00384	The Home Computer Course No.19	Orbis
00385	The Home Computer Course No.20	Orbis
00386	The Home Computer Course No.21	Orbis
00387	The Home Computer Course No.22	Orbis
00388	The Home Computer Course No.23	Orbis
00389	The Home Computer Course No.24	Orbis
00390	The H.Computer Adv.Course No.1	Orbis
00391	The H.Computer Adv.Course No.3	Orbis

New TNDs arrived this month

Mar'89 Apr'89

Appeal: Anyone who has any computer magazines that have the TI99/4A in them and who do not use them, why not donate them? These magazines could include really old ones that were out in the TI99/4A's heyday, like Compute or Computer and Video Games. These all featured the TI99/4A

Press update

by Larry Saunders

Unfortunately, as this is being written (March 30th 1989), Press is still not available. The reasons for this are many and varied, but a short synopsis of the situation is due.

Press was originally slated for release on November 12, 1988. Asgard introduced the program at the Chicago TI-Fair to some acclaim. The copy Asgard demonstrated was actually a "complete" version of the program, essentially most of the coding was pretty much done at that time, and the only thing that remained to be done was debugging the program. Obviously, Asgard vastly over estimated their ability to do this quickly.

Press turned out to be a real bear to debug. This is primarily because it is so large. At nearly 90K of assembly code it is 6 times larger than TI-Writer, and fully 3 times larger than almost any other TI99/4A (or even Geneve 9640) program. Size alone presented many problems that were literally unprecedented and which had to be addressed in new, untried ways. Charles Earl, the author, literally invented new ways of TI99/4A programming. The first major problem was that the core of routines used in the program (which can be referred to as the "subroutine library") was simply too large to keep all in memory at once. These routines are the bits of program code that the major functions of the program (search and replace, etc.) call in order to accomplish their jobs in a consistent and efficient manner. Additionally, the major functions themselves could not all be placed in memory at once. Asgard had to work out a method by which all the necessary subroutines are in memory at the same time a major function is, invisibly to the user.

Asgard managed to solve this problem (which caused much of the delay) several months ago. Since then they worked on a different or related problem, that of giving each subroutine and major function space to work in, within the constraints of 32K RAM. If Asgard simply assigned each subroutine a permanent area of memory, not only would most of that memory not be used at any one time, the amount that would have to be reserved is impossible if the program is to do what its advertised to do. Charles hit upon a method by which programs ask the "memory manager" portion of the code for memory, which the memory manager then allocates from a "stack" of available memory. When the subroutine is done, the "used" memory is returned to the stack to be "reused" by another program (in gross terms). This problem has been more or less solved, but again, Asgard are currently working on other aspects of the same problem, too much program, too little space. The speed of the computer has never represented a problem, nor the creation of the Geneve version. When Press is finally released, it will not only leave Asgard's office with no known bugs, but with actually more features and capabilities than Asgard originally advertised for the program. So much so that Asgard are re-writing significant parts of the manual Asgard produced for the program.

The program could arrive any time as Asgard said about one or two more weeks for it to be available, maybe.

Extended Display Package
part 7

by Craig Sheehan

Most interest in High Resolution graphics revolves around the drawing of simple geometric shapes. Following the adage that the simpler things are often the best, we will avoid methods that use complex mathematics. However, a small knowledge of coordinate geometry will be required: if you can place characters using the HCHAR or VCHAR command, then you have all the knowledge that is needed.

Lines are fundamental to drawing pictures, for many simple shapes are composed of multiple lines. A simple parametric formula for a line drawn between the point (Xa,Ya) and (Xb,Yb) is:

$$Y = Ya + t(Yb - Ya)$$
$$X = Xa + t(Xb - Xa)$$

Here, "t" is the parameter. By varying "t" between 0 and 1, the complete line is described. The number of steps of t required to draw a smooth line is equal to the maximum value of (Yb - Ya) and (Xb - Xa). Using this fact gives the following subprogram.

```
10000 SUB LINE(YA,XA,YB,XB):: DX=XB-XA :: DY=YB-YA ::
      FOR T=O TO 1 STEP 1/MAX(ABS(DX),ABS(DY)) :: CALL
      LINK("PLOT",YA+DY*T,XA+DX*T):: NEXT T
10010 SUBEND
```

A call to this subprogram has the syntax:

CALL LINE(starting row, starting column, finishing row, finishing column)

As simple example on using the subprogram, the following program segment when placed in front of the above code segment will draw rays originating from the top left hand corner of the window.

```
100 CALL LINK("XDP")
110 FOR T=10 TO 100 STEP 10
120 CALL LINE(1,1,T,100)
130 NEXT T
140 CALL KEY(0,K,S):: IF S=0 THEN 140 ELSE CALL
    LINK("NORMAL")
```

Once we can draw lines, we can draw many other shapes. For example, a regular polygon is simply the combination of many lines each having the same length and the same angle between them. The following subprogram will draw a regular polygon with any number of sides:

```
11000 SUB POLYGON(Y1,X1,Y2,X2,SIDES)::
      ANGLE=-PI*(SIDES-2)/SIDES :: S=SIN(ANGLE) ::
      C=COS(ANGLE)
11010 FOR T=1 TO SIDES :: CALL LINE(Y1,X1,Y2,X2)::
      X=X1-X2 :: Y=Y1-Y2 :: X1=X2 :: Y1=Y2
11020 X2=X*C-Y*S+X2 :: Y2=X*S+Y*C+Y2 :: NEXT T ::
      SUBEND
```

Arguments for POLYGON are similar to that for LINE. The first four give the starting and finishing coordinates of one line that forms part of the polygon, in other words one side of the polygon, and the fifth argument specifies the number of sides. Note that the POLYGON subprogram requires the presence of the LINE subprogram to operate correctly. The following example shows how this would be done in a program. It will draw all the polygons from triangles to octagons using a single side as a base.

```
100 CALL LINK("XDP",32,1,24,1,32)
110 CALL LINK("PLTCHR",96,239)
120 FOR X=3 TO 8
130 CALL POLYGON(50,120,80,150,X)
140 NEXT X
150 CALL KEY(0,K,S):: IF S=0 THEN 150 ELSE CALL
    LINK("NORMAL)
```

```
10000 SUB LINE(YA,XA,YB,XB):: DX=XB-XA :: DY=YB-YA ::
      FOR T=O TO 1 STEP 1/MAX(ABS(DX),ABS(DY)) :: CALL
      LINK("PLOT",YA+DY*T,XA+DX*T):: NEXT T
10010 SUBEND
```

```
11000 SUB POLYGON(Y1,X1,Y2,X2,SIDES)::
      ANGLE=-PI*(SIDES-2)/SIDES :: S=SIN(ANGLE) ::
      C=COS(ANGLE)
11010 FOR T=1 TO SIDES :: CALL LINE(Y1,X1,Y2,X2)::
      X=X1-X2 :: Y=Y1-Y2 :: X1=X2 :: Y1=Y2
11020 X2=X*C-Y*S+X2 :: Y2=X*S+Y*C+Y2 :: NEXT T ::
      SUBEND
```

Circles are another fundamental shape, and again, a parametric representation is used. The equations for a circle are:

$$Y = r \sin t$$
$$X = r \cos t$$

where r is the radius (in pixels) of the circle and t (in radians) varies between 0 and twice PI. For a circle, the number of steps required to get a smooth curve is 2 x PI x R, which results in the subprogram:

```
10200 SUB CIRCLE(CY,CX,R):: FOR T=O TO 2*PI STEP 1/R ::
      CALL LINK("PLOT",CY-R*SIN(T),CX+R*COS(T)):: NEXT T
      :: SUBEND
```

In the argument list of "CIRCLE", "CY" and "CX" are the coordinates of the row and column of the centre of the circle respectively and "R" is the radius. Note that there is no error trapping in this subprogram, nor any of the others presented here for that matter, so values where part of the circle is not contained on the screen will result in a "BAD VALUE ERROR" a some stage.

Once you can draw a circle, ellipses are just as simple. If the ellipse has a row axis radius of RX and a column axis radius RY, then the ellipse is described by the pair of equations:

$$Y = RY \sin t$$
$$X = RX \cos t$$

After it is noted that a circle is simply an ellipse with RX = RY = R, the above subprogram can written to include circles and ellipses as follows:

```
10200 SUB CIRCLE(CY,CX,R):: CALL ELLIPSE(CX,CY,R,R)::
      SUBEND
10210 SUB ELLIPSE(CY,CX,RY,RX):: FOR T=O TO 2*PI STEP
      1/MAX(RX,RY):: CALL LINK("PLOT",CY-RY*SIN(T),
      CX+RX*COS(T)):: NEXT T SUBEND
```

Trying this subprogram out with various values will show that the ellipse is not smooth. This is because the radius of the ellipse varies with t, and the solution to the equation to give the varying step required can not be solved for a general ellipse. To obtain the smooth curve, other methods must be used, but I will not cover these as the mathematics is quite involved.

Similar methods can used to plot just about any mathematical function. Provided you can obtain a good parametric representation, it is only a matter of ensuring that the parameter is varied only with it domain (i.e. values for which the function exists). Here is an example to plot the function:

$$r \times r = 11250 \cos (2t)$$

where r is the radius of the point from the origin and t the angle that radius makes with radius. Since this is a polar representation, it is necessary to convert to a rectangular coordinates before plotting. It is also worth noting that this curve is symmetrical about the axis, and it is only necessary to calculate points for one quarter of the curve, and then reflect that point about the axis. You will also note that as for the ellipse, the parametrization does not produce a smooth curve near the centre.

From the Bulletin Board

MAIL TO : ALL
MAIL FROM : LARRY

There will be demonstrations of the P-Gram card and the Grand-RAM card as well as other new software at the Carlingford and Liverpool regional meetings in April.
Bye for now LARRY

MAIL TO : ALL
MAIL FROM : LIVERPOOL

I have a Version of Menu called ROOT. It comes in 2 versions, one for working with RAMdisks and the other works from a disk drive without using a RAMdisk. It works the same as the RAMdisk menu in most ways. It is ideal for members that do not have a RAMdisk but would like a program that works like a RAMdisk menu.
Any one liking a copy tell me (Larry). It is a Freeware program. I also have a have a copy of menu that is set to work with a Supercart or P-Gram Card. I have cracked Super Extended BASIC onto disk and a some other programs that as far as I know no one has done before. I am now working on implanting them. Bye for now LARRY.

MAIL TO : ALL
MAIL FROM : LARRY

Just arrived from the USA the P-Gram Card, Grand Ram, TypeWriter 99, and a lot of other programs. Tried the P-Gram Card and have found it to be very good. The Grand Ram has a MENU of two pages only but has hot keys to turn on and off functions and call programs. It has 2000 sectors, 64K chips, one layer (no piggy back chips) battery back up. It comes with a powerful Disk manager and a disk version of its MENU that will work from a disk drive like the RAMdisk menu from the RAMdisk but it does not need a RAMdisk.

MAIL TO : ALL
MAIL FROM : TIMAGIC

Hi all. I am new to the club but loving it. This is a great board. Could anyone tell me where I can get some good graphic adventure games for the TI99/4A. Hope to hear from someone soon. PS prefer cartridges not tapes.

MAIL TO : ALL
MAIL FROM : ADVANCED

A friend of mine has more or less been talked into buying a console plus PRK, Console Writer, PRG, a print interface stand alone and some kind of printer. His name is Barry Brown, telephone (02)620 1296.
Quoted $150 console $15 Personal Record Keeper $15 Personal Report Generator $100 Interface $100 Printer $380 total add $25 or whatever for a Cart-Writer or second hand Console Writer and for $405 he can handle business as PRK and PRG work together as a spreadsheet or as a database or comically both if you give postcodes integer values and find reports ending in total postcodes. Anyway for his customer records Barry can use his own TV set and cassette recorder and do very easy accounting and update for alpha name, alpha suburb, numeric cash or numeric date and have total bills minus cash received done by PRK and printed. A cable should come with the interface and printer, and the console ought to have modulator and cassette leads. A cartridge expander would be a nice touch with the cartridges. If he had Console Writer/CartWriter on the expander with the PRK and PRG, he would need a little sprayer of contact cleaner and a few cotton buds or a camel's hair brush to be in business! Somebody might like to sell him a stand alone modem with print interface built in, then he can be roped into telecommunicating via the BBS.
This is a chance to sell goods and recruit a new member at the same time!

Disassembling X/B

correction   by Ross Mudie

Unfortunately there were some errors in this article from the April TND. Ross owns up to one, namely the pages in TI99/4A Intern were from 146 to 147. The other problem was one generated by the formatter which I had carefully avoided in the rest of the article but not in the program listing. So here is the program listing again and I hope not too many tried the original without success.

```
100 ! SAVE DSK1.XBDISASS
110 ! By Ross Mudie, TISHUG,23rd February 1989.
120 CALL INIT
130 CALL PEEK(-31952,A,B,C,D)
140 OPEN #1:"PIO"
150 PRINT #1:"LINE NUMBER TABLE":"Address Line
     Line":"        Number    Address"
160 FOR Z=256*A+B-65536 TO 256*C+D-65536 STEP 4
170 CALL PEEK(Z,E,F,G,H)
180 PRINT #1:Z;TAB(8);256*E+F;TAB(18);256*G+H-65536-1
190 NEXT Z
200 PRINT #1: :"X/B PROGRAM LINES":"Address
        Data";TAB(52);"Interpretation"
210 FOR Y=256*C+D-65536+1 TO -25 STEP 8
220 CALL
    PEEK(Y,P(1),P(2),P(3),P(4),P(5),P(6),P(7),P(8))
230 PRINT #1:Y;TAB(6);P(1);TAB(12);P(2);TAB(18);P(3);
    TAB(24);P(4);TAB(30);P(5);TAB(36);P(6);TAB(42);
    P(7);TAB(48);P(8);TAB(56);
240 FOR I=1 TO 8
250 IF P(I)>31 AND P(I)<127 THEN PRINT
    #1:CHR$(P(I));ELSE PRINT #1:".";
260 NEXT I
270 PRINT #1
280 NEXT Y
290 CLOSE #1
```

For Sale

Typewriter 99 review

by Larry Saunders

This program is rated by MICROpendium as one of the top 5 programs of 1988. It is only 17 sectors in size but is as versatile as an electronic typewriter with all the sophisticated functions to do small tasks; addressing envelopes, writing short notes, printing labels etc. This program typewriter is very sophisticated with centering, bold, underline, Setable margins (that can be changed at any time) as well as the tabs, pica, elite, and any other setting on any printer, it even word wrap and right justify! The window on the screen shows you the 6 previous lines you typed so you never have to look at your printer. Simply type on your computer keyboard and Typewriter 99 does the rest! This program will print a line at a time (allowing you to make changes before they hit paper) or a character at a time. Perfect for doing things on the fly. You can do a variety of things on one line eg, a word or character bold or underline or both at the same time as simply as ABC.

```
Performance........A+
Ease of Use........A+
Documention........A+
Value for money....A+++
Final Grade........A+
```

Manufacturer: Asgard Software
PO Box 10697
Rockville, MD
USA, 20850
Price US$9.95 plus postage and handling
It is well worth every cent.

Typewriter 99 operation manual

Typewriter is available in three versions; a disk version, a cassette version for people with a Mini Memory and a printer, and a module version for people with just a printer. Simplest way to use Typewriter is from a RAMdisk or module.

Loading Instructions

Loading from RAMdisk: Will load with the Extended BASIC module by just pressing the key you have configured on MENU for Typewriter. Will not load without MENU program from Extended BASIC.

Loading from disk without a RAMdisk MENU: Place Typewriter disk in disk drive one with either an Editor Assembler or TI-Writer module in the cartridge port or from the P-Gram card. Select the module. Then, with the Editor Assembler, select option #5 (run program file), enter the filename DSK1.TYPE, and press ENTER. With TI-Writer select option #3 (Utility), type in the filename DSK1.TYPE, and press ENTER. In both cases, the program will load and run.

Loading from Cassette: With the Mini- Memory in the cartridge port, turn on the computer and select option #2 (Mini Memory) from the main menu. Select option #1 (Load and Run) from the Mini Memory menu, and enter the name CS1 and press ENTER. Follow the on screen instructions, and when the program is loaded correctly, it will start.

Running the Cartridge: Simply place the module in the cartridge port, turn on computer, press any key to advance past the title screen, and select "Typewriter" from the main menu.

Proceed to the section using Typewriter after the title screen of the program appears. Before you can begin typing, you have to answer a few questions.

First, you must select your printer port name. Use the up and down arrow keys (FCTN[E] and FCTN[X]) to move through the list of available options. If you are not sure which interface you are using, consult the manuals that come with your printer interface. Select the appropriate one for your printer port and pressing ENTER to verify your choice. If it is TI PIO just press ENTER.

Next, you must set the left and right margins (which are pre-set at 10 and 70 columns, respectively). You can reset the margins while typing if you like, so if the ones you select are inappropriate you can change them later. If OK press ENTER. If not, first set the right margin by moving the little upsidedown triangle on the bar with the left and right arrow keys (FCTN[S] and FCTN[D]), and then press ENTER to verify your choice. If setting now OK, press ENTER or else select the left margin in the same manner. Be careful in setting the margins. If you set one beyond your page size your printer will write out the entire line you type on as many page lines as needed, which will not look all that nice on the paper.

Now you should see the main program screen. The cursor will appear at the lower left hand corner of a 7 line box on the screen, the margin bar will appear above it, and a list of commands will be at the bottom of the screen. Underneath the box is another bar that shows you where the tab stops are. You can jump to the next tab stop by just pressing CTRL[N]. If you would like to set a tab stop, just press CTRL[T]. You can also "un-select" a tab stop by pressing the same key.

The box on the screen is where you type. A small tick on the margin bar indicates where your cursor is relative to the page itself. If you move your cursor (by typing or pressing the left or right arrow keys) the tick will also move. The box itself needs some explanation. It is actually a "window" on a much longer line. As you type, when you get to the right end of the box text will seemingly disappear on the side. Do not worry, everything you have typed on that line is still there. In fact you can scroll back to the start of the line by using the left arrow key to make changes. You can also use the "Window over" key (FCTN[5]) to view the entire line one chunk at a time (pressing this key repeatedly moves the window to the right, and then back to the start of the line). If you need to delete a character on the line, put the cursor on it with the arrow keys, and press FCTN[1]. If you need to insert a space to type a character, press FCTN[2]. Press either of these keys repeatedly to delete or insert characters on your line. When you are satisfied that the text on the line is correct, press ENTER to send to the printer.

As you type a line and press ENTER, the entire window scrolls up. In this way you can view, without looking at the paper, the 6 previous lines you have typed. Using the "Window over" key (FCTN[5]), you can review whatever you have typed rapidly without moving the cursor.

After you have typed a while, you will have noticed the commands listed at the bottom of the screen. To select one of these commands, press the CTRL key and the capitalized first letter of the command simultaneously. These commands function as follows:

* = Inverse when turn on
# = Will only operate in LINE MODE

CTRL[K] – * Keyclick: This command is used to turn on and off the "keyclick", a little noise the computer will make as you strike each key. Experienced touch typists use the keyclick to subconsciously determine whether each key was pressed or not.

CTRL[C] – # Center: This key command is used to automatically center whatever text you typed on a line. If you need to type a title, for instance, type the title, press this key, and whatever you typed will be centered on the page within the margins. Press ENTER to print out the text.

CTRL[J] - *# Justify: This allows you to right justify a line of text. When word wrap mode is on (described below), simply type normally and text will be justified. When it is off, you can justify a line by pressing the down arrow key (FCTN[X]) at the end of the line.

CTRL[W] - * Word wrap: Normally, when you get to the end of a line as you type, Typewriter will not allow you to continue to type until you press ENTER. With this option selected, Typewriter will automatically print out the text you typed on a line and send you to the next line, complete with the last word you typed (if it would not fit on the previous line). With the "justify" option, described above, selected, the text on the line typed will be right justified (ie the right side of a paragraph will be even down the page at the margin, spaces will be inserted in the line in order to get this effect). This allows you to create more "professional looking" documents.

CTRL[B] - * Bold: Sometimes you want to emphasize a word, a phrase, a line, or a letter or number, This command allows you to set a few words or even whole lines in darker print. To turn on bold simply press this key, and as you type a small "b" will appear on the tab bar underneath each bold character. To turn off the bold text simply press the key again. In this way you can make as many or as few characters as you want bold.

CTRL[U] - * Underline: As with bold command above, sometimes you want to underline a letter, a word, a few words or lines. This command functions exactly like the bold command, except that the text itself in the line will be underlined on the screen. You can have text that is both underline and bold at the same time.

CTRL[S] - Spacing: This allows you to select the space between each line on the page. If you are writing a report or a letter, sometimes you will want a blank line between each line (called "double spacing"), or even 2 blank lines ("triple spacing"). With no blank lines between each line you have ("single spacing"). Simply press this key repeatedly until the spacing you want is displayed on the upper right side of the screen (can be changed at any time).

CTRL[N] - Next tab: This command allows you to jump the cursor to the next tab stop on the line (indicated with a little "T" under the space). This is useful if you want to indent lines, or if you need to type a table.

CTRL[T] - Tab set: This command allows you to mark or unmark a space as a tab stop, Simply move the cursor over the space/tab stop and press the key.

In addition to the keys describe above there are a few other key commands that should be noted even though they are not listed on the screen.

FCTN[1] - Delete character: This deletes the character at the cursor.

FCTN[2] - Insert character: This inserts a space at the cursor.

CTRL[5] - Window over: This is used to display the next window.

FCTN[9] - Restart program: This allows you to completely re-start Typewriter. If you selected the wrong printer port name, or just want to start over again.

FCTN[M] - Type mode: This allows you to switch between the "line" mode (the mode the program is in when it starts) and the "type" mode, and back. The difference between these modes is that in the "type" mode characters are printed as you type them, while in the "line" mode an entire line is printed at a time when you press ENTER or get to the end of the line (in word wrap mode). Whichever mode you select

is entirely up to your own personal preference on the matter, but the "line" mode permits some editing before a line is printed while the "type" mode does not. Some functions not available in the "type" mode include the insert and delete character keys, centering and justification. The left and right margins may only be changed in "line" mode as well (see functions description below). The "type" mode will let you change print styles at any point on the line. Where the "line" mode is limited to change before or after the line is printed.

FCTN[=] - Quit.

CTRL[3] - Screen colours: This allows you to select your favorite screen colour combinations.

CTRL[L] - Left margin: Set the same as when setting the main screen.

CTRL[R] - Right margin: Set the same as when setting the main screen.

Using these keys you should be able to type anything from an envelope to a multi-page letter.   o

Printing 132 columns with the AT MFC
by Geoff Trott

Dick Warburton was complaining that he was unable to get his printer to print past column 80 using PIO on one of Peter Schubert's AT multifunction cards. I have had a look at the code in the DSR and found that there is a very elegant way of doing this with this particular device. There are two extra software switches available, LL for line length and MA for margin. If you want to print something (Multiplan?) to 132 columns with a left margin of 10 say, then the device name to use is "PIO.LL=132.MA=10". A further enhancement is that you can specify ".LF=2" to double space the output or some other number for wider spacing. This should make it easier to print from Multiplan.   o

```
100 CALL LINK("XDP",32,1,24,1,32)
110 FOR T=PI/4 TO 0 STEP PI/256
120 R=SQR(11250*COS(2*T))
130 Y=R*SIN(T)
140 X=R*COS(T)
150 CALL LINK("PLOT",96+Y,128+Y,96+Y,128-X,96-Y,128+X,
    96-Y,128-Y)
160 NEXT T
170 CALL KEY(0,K,S):: IF S=0 THEN 170 ELSE IF K<>80
    THEN CALL LINK("NORMAL")ELSE CALL LINK("SCRDMP")::
    GOTO 170
```

Once the curve is plotted, pressing P will give a screen dump and any other key will gracefully exit the program.

_____

That concludes this series on using "Extended Display Package". Copies of XDP are available from the club shop for the usual media fee. A tutorial disk on using the package and a set of documented source files (for those who understand assembly language) are also available.

Any questions or comments about XDP can be forwarded to the author via the following address:
Mr. Craig Sheehan
21 Suzanne Road
Mona Vale NSW 2103

All letters will be answered. In closing, I hope that this series has helped you understand XDP and prompt you write programs using it.   o

Buckaroo Banzai

part 1
by Larry Saunders

INTRODUCTION

Buckaroo Banzai, born to an American mother and a Japanese father, began life as he was destined to live it, going in several directions at once. A brilliant neurosurgeon, this restless young man grew quickly dissatisfied with a life devoted solely to medicine. He roamed the planet studying the martial arts and particle physics, and in the process he collected around him a most unusual group of scientists called the Hong Kong Cavaliers.

With the advent of the jet car, Buckaroo was able to travel through solid matter, where he discovered a dimension passage through space itself. In the process, he discovered that evil aliens called Lectroids had used the passage and were here on earth. Their presence was a worldwide threat and through tremendous effort, Banzai and his friends were able to destroy the aliens.

With the Lectroids disposed of, Buckaroo was planning to take some well deserved R and R. But the phone rang. As Perfect Tommy handed Buckaroo the phone, he whispered, "It's the President and he sounds worried." Buckaroo took the call and was quickly filled in on the details of the new Lectroid dilemma. Just before the Lectroids assembled to leave the earth, a small group from a Yoyodyne office in Arizona created a problem. The President had received a communication that a large thermonuclear device had been buried deep inside Kyn Mountain, just outside Trantham, Arizona. The message further stated that any attempts to destroy the bomb would trigger its detonation. The area around the mountain, including the town of Trantham was evacuated, but a panic set in and power and telephone lines have been knocked out by the evacuation.

The CIA and other resources have been able to establish the following information. The bomb is located inside a hollow cavern, too deep inside the mountain to be reached quickly by conventional blasting. The bomb is giving off some sort of radio interference, preventing radio communication in the area. The bomb size, based on hot-spot satellite scanning, may be large enough to take out the entire state.

"Buckaroo", said the President, "can you save Arizona?" Banzai agrees to try and has the Air Force airdrop the jet car into the area for possible use. Worried, however, by the dangers, he stops the rest of the Cavaliers from accompanying him on this, possibly his final mission.

Now, you as Buckaroo Banzai, have a job to do, if you want to see the rest of the world again!

HOW AN ADVENTURE WORKS

You are in charge of the main character. Any action, response, or behaviour that the character performs comes from you. Everything that happens in the adventure affects you. You may move through the many locales described in the adventure (limited, of course, by the barriers and obstacles imposed upon you by the "environment"). You control what to do in any given situation, using your wits to succeed. To communicate with the program, complete the sentence with the phrase "Buckaroo Banzai, I want you to". To correctly finish this sentence, your first word should normally be a verb, a word denoting an action in correct English. If you have a TRS-80 computer, the program understands only two word commands. In this case the first word needs to be a verb and the second word a noun.

1 - CANNOT GO DOWN THE STAIRS?
   153 81 124 171 2 121 8 56 125 168

2 - More help for the above problem.
   56 104 43 56 170
3 - Solution to the above problem.
   2 104 43 244 2 28 171 2 61 232 15
   _____

4 - CANNOT GET GAS AT THE STATION?
   143 43 183 132 192 2 145 70
5 - More help for the above problem.
   2 209 25 100 153 229 218 230 2 161 195
6 - Solution to the above problem.
   102 25 100 153 20 2 245 87 153 87 2 145
   _____

7 - THE HOSE FROM THE HAND PUMP WILL NOT REACH THE GASOLINE?
   97 159 2 87 41 44 236 75 41
8 - More help for the above problem.
   137 2 29 40
9 - Solution to the above problem.
   155 2 83 41 230 2 40 153 245 87
   _____

10 - CANNOT MAKE THE CAR GO?
   62 23 2 115
11 - More help for the above problem.
   37 146 2 83 114 85
12 - Solution to the above problem.
   74 2 222 64 66 39 37 102 212
   _____

13 - CANNOT GET THE RADIO TO WORK?
   65 71 242
14 - More help for the above problem.
   2 179 105 56 200 66 213 42 62
15 - Solution to the above problem.
   138 179 153 225 66 36 242 153 42
   _____

16 - CANNOT FIND A BATTERY?
   56 73 172 43 56 164 153 212 40 46
17 - More help for the above problem.
   26 244 2 152 135
18 - Solution to above problem.
   137 2 131 244 2 152 135 66 81 200
   _____

19 - CANNOT GET RADIO TO WORK EVEN WITH THE BATTERY?
   62 23 2 200
20 - More help for above problem.
   38 40 46 100 208 244
21 - Solution to above problem.
   136 2 200 171 2 18
   _____

22 - CANNOT GET RADIO TO WORK EVEN WITH THE BATTERY?
   20 2 223
23 - More help for above problem.
   2 200 234 229 118 189 242 148 132 2 179
24 - Solution to above problem.
   20 2 60 33 153 36 2 200 153 2 132 116 216 2 206 126
   102 148 177 242
   _____

25 - STILL HAVING PROBLEMS WITH THE BATTERY?
   20 2 223
26 - More help for above problem.
   2 200 234 229 118 189 242 148 132 2 179
27 - Solution to above problem.
   20 2 60 33 153 36 2 200 153 2 132 116 216 2 206 126
   102 148 177 242
   _____

28 - CANNOT FIND A CONTAINER FOR THE GASOLINE?
   137 2 142 173
29 - More help for above problem.
   143 169 140 204 171 2 3 56 93 117 66 56 69
30 - Solution to above problem.
   137 2 59 230 2 3
   _____

31 - CANNOT FIND THE BAUXITE?
   110 43 162 171 53 112 1 171 34
32 - More help for above problem.
   137 2 103
33 - Solution to above problem.
   22 4 30 2 6
   _____

34 - CANNOT GET ABOVE THE LEDGE?
   212 56 151
35 - More help for above problem.
   47 151 188 238 20 180 202
36 - Solution to above problem.
   176 171 2 82 81 2 161 12 154 66 20 242 227 151

37 - CANNOT GET THE PHONE LINE?
   153 81 56 45 216 2 154 8 242 190 171 140 31
38 - More help for above problem.
   176 182 178 211 181
39 - Solution to above problem.
   176 140 79 58 171 2 82 199 190 2 166 171 51 58 66
   219 2 166 157
----
40 - FOUND THE BAUXITE, BUT CANNOT GET IT?
   56 101 158 148 229 167 153 138 239 241
41 - More help for above problem.
   133 157 56 130 153 81 2 158 78 232 2 6
42 - Solution to above problem.
   186 2 154 153 2 158 159 35 2 154 199 219 2 158 78
   129
----
43 - CAR EXPLODES WHEN YOU PRESS THE STARTER?
   2 40 96 232 29 83 196 145
44 - More help for above problem.
   80 102 63 2 83 41 214 111 242 153 87 2 145
45 - Solution to above problem.
   2 145 234 229 230 2 83 41 171 2 18
----
46 - THE CAR JUST IDLES WHEN I START IT?
   56 40 127 153 26 160 134 122 229 69 215 2 16 43 74
47 - More help for above problem.
   119 2 16
48 - Solution to above problem.
   2 16 234 229 11 199 2 156 141 47 102 203 2 40 153
   149
----
49 - CANNOT SEEM TO GET THE BATTERY CHARGED?
   46 144 57 47 2 40 27 169 98 153 43 54
50 - More help for above problem.
   81 2 29 40 54
51 - Solution to above problem.
   2 29 40 25 77 126 102 148 144 2 200
----
52 - CANNOT SEEM TO MAKE THE RADIO DO ANYTHING EXCEPT
   COUNTDOWN?
   153 32 2 210 8 89 56 228 123 2 179
53 - More help for above problem.
   2 210 43 226 56 179 184 174 43 90 92 179 120 230 86
   242
54 - Solution to above problem.
   20 2 29 40 153 26 244 2 103 126 102 148 32 2 184
   126 2 210 25 72 92 128
----
55 - AFTER DRIVING INTO THE MOUNTAIN EVERYTHING GOES
   DARK?
   165 153 240 19 2 94 88 227 2 173
56 - More help for above problem.
   102 217 56 125 168
57 - Solution to above problem.
   243 2 104
----
58 - CANNOT FIGURE OUT HOW TO TURN OFF THE RFI SHIELD?
   137 2 210
59 - More help for above problem.
   37 220 2 185 201
60 - Solution to above problem.
   139 2 67 232 2 210 66 22 37 150 153 2 185
----
61 - CANNOT FIND THE CATALYST?
   194 197 162 242
62 - More help for above problem.
   235 207 55 125
63 - Solution to above problem.
   52 2 231 216 106 95
----
64 - CANNOT FIND THE SAFE?
   52 244 2 198 108
65 - More help for above problem.
   137 2 107
66 - Solution to above problem.
   149 2 107
----
67 - FLASHLIGHT RUNS OUT?
   46 237 193 126 147
68 - More help for above problem.
   68 169 196 224
69 - Solution to above problem.
   237 20 2 104 215 84 21
----

70 - ALWAYS GET KILLED ON THE FREEWAY?
   92 17 48 164 244 235 187
71 - More help for above problem.
   143 43 183 50 153 113 187
72 - Solution to above problem.
   13 10 2 175
----
73 - DO NOT UNDERSTAND WHY I'M HERE?
   153 221 56 49
74 - More help for above problem.
   153 32 56 210
75 - Solution to above problem.
   24

Dictionary

1	MINED	68	THESE	135	BOOTH
2	THE	69	DANGEROUS	136	FILL
3	LAB	70	PUMPS	137	EXAMINE
4	WHATS	71	EXAMINING	138	TAKE
5	GOOD	72	RECEIVED	139	FLIP
6	LEDGE	73	SERVICE	140	TWO
7	SAFE	74	OPEN	141	PRESSED
8	REQUIRES	75	ANOTHER	142	BASEMENT
9	KEY	76	COMES	143	THERE
10	OFF	77	IDLE	144	CHARGE
11	CLOSED	78	UP	145	GASOLINE
12	PHONE	79	SEPARATE	146	DOES
13	STAY	80	DID	147	LONG
14	VEINS.	81	GET	148	CAN
15	HICKORY	82	FIELD	149	MOVE
16	COCKPIT	83	FUEL	150	HAPPENS
17	MISSION	84	ABSOLUTELY	151	ROPE
18	LAKE	85	SAY	152	CASHIERS
19	LIKE	86	REACHING	153	TO
20	USE	87	PUMP	154	LINE
21	NECESSARY	88	PROBLEM	155	TAPE
22	SEE	89	TRANSMITTING	156	STARTER
23	AT	90	BLOCKING	157	OUT
24	SLEEP	91	STORE	158	PICK
25	WILL	92	YOUR	159	EXTENDING
26	GO	93	MIXING	160	700
27	THEY	94	SAME	161	UNDERGROUND
28	TOOLBOX	95	FLUID	162	FOUND
29	JET	96	RUNS	163	HARDWARE
30	ABOVE	97	CONSIDER	164	PLACE
31	PLACES	98	ATTACHED	165	SOUNDS
32	DISARM	99	FOUNTAIN	166	CABLE
33	CABLES	100	HAVE	167	USED
34	MOUNTAINS	101	CLIMBERS	168	SOURCE
35	CLIMBING	102	YOU	169	ARE
36	CONNECT	103	MOUNTAIN	170	TOOL
37	WHAT	104	FLASHLIGHT	171	IN
38	ALL	105	NEEDS	172	STATION
39	READ	106	GLOWING	173	LABORATORY
40	CAR	107	TABLE	174	THAT
41	HOSE	108	OFFICE	175	FREEWAY
42	ANTENNA	109	VEINS	176	DIG
43	IS	110	BAUXITE	177	RECHARGE
44	BY	111	USING	178	THAN
45	SECTION	112	USUALLY	179	RADIO
46	BATTERIES	113	LEAVE	180	SOMETHING
47	IF	114	GAUGE	181	HOLE
48	TAKES	115	DASHBOARD	182	MORE
49	DISASTER	116	TERMINALS	183	NO
50	REASON	117	VAT	184	INTERFERENCE
51	BOTH	118	CHARGED	185	LIGHTS
52	ITS	119	CLOSE	186	TIE
53	VEINS	120	SIGNALS	187	TOWN
54	RUNNING	121	DARK	188	ISN'T
55	EMITS	122	WOULD	189	BEFORE
56	A	123	THRU	190	CUT
57	FASTER	124	AROUND	191	POSTER
58	HOLES	125	LIGHT	192	FOR
59	STAIRCASE	126	SO	193	LAST
60	JUMPER	127	DESIGNED	194	YOU'VE
61	HOUSE	128	COMMANDS	195	TANKS
62	LOOK	129	BEHIND	196	NOT
63	REPLACE	130	WAY	197	ALREADY
64	COMPARTMENT	131	TRASHPILE	198	YOYODYNE
65	TRY	132	POWER	199	THEN
66	AND	133	FIGURE	200	BATTERY
67	SWITCH	134	MPH		continued on page 22

Tips from the Tigercub #30

by Jim Peterson, Tigercub Software, USA

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MIDDLE/HIGH SCHOOL MATH,   VOCABULARY AND READING,
MUSICAL EDUCATION, KALEIDOSCOPES AND DISPLAYS.
For descriptions of these send a dollar for my catalog!

I goofed again! If you tried the Quickloader in Tips #29 with a disk containing more than 20 programs, you may have already noticed that line 140 should go to 160, not 155.

Here is another Tigercub Challenge. Can you run this and get these results?

```
>LIST
100 PRINT PI
110 PRINT MAX
120 PRINT PI
130 PRINT MAX
>RUN
  0
  0
  3.141592654

* SYNTAX ERROR IN 130
```

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

It helps to go into fixed mode with CTRL 0 when you are inserting extra carets. When using this method, it is also necessary to set the paragraph indentation with IN 0 on the command line; if indentations are desired, they can be filled with caret signs, like this:
^^When using this method.

I am told that my old 3D Sprite Routine made it to the Golden Quickies section of CompuServe, so here is an updated version. I have found that sprites can be controlled much more easily (although not moved as rapidly) with CALL LOCATE, rather than turning them loose with CALL MOTION and then trying to catch up with them!

```
100 CALL CLEAR :: CALL SCREEN(5):: FOR SET=2 TO 8 ::
    CALL COLOR(SET,8,5):: NEXT SET :: DISPLAY
    AT(3,12):"3-D SPRITE DEMO"
110 DISPLAY AT(22,1):"BY TIGERCUB" :: CALL CHAR(40,
    "FF818181818181FF81818181818181FF
    FF010101010101FF0101010101010101FF")
120 CALL CHAR(36,RPT$("F",64)):: CALL MAGNIFY(4):: FOR
    X=2 TO 22 STEP 2 :: CALL
    SPRITE(#X,36,X/2+1-(X>7)-(X>13),32+X*6,40+X*6)::
    NEXT X
130 S=1 :: CALL SPRITE(#S,40,16,46,7):: FOR C=6 TO 42
    STEP 2 :: CALL LOCATE(#S,46,C) :: NEXT C :: FC=44
    :: FR=46 :: Y=0
140 FOR C=FC TO FC+44 STEP 2 :: CALL LOCATE(#S,FR,C)::
    NEXT C :: FC=FC+44 :: CALL
    SPRITE(#S+2,40,16,FR,FC):: CALL DELSPRITE(#S)::
    TC=FC-32
150 FOR C=FC TO TC STEP -2 :: CALL LOCATE(#S+2,FR,C)::
    NEXT C :: TR=FR+34 :: FOR R=FR TO TR STEP 2 :: CALL
    LOCATE(#S+2,R,TC):: NEXT R
160 CALL SPRITE(#S,40,16,TR,TC):: CALL
    DELSPRITE(#S+2):: FR=TR :: TR=FR-72 :: FOR R=FR TO
    TR STEP -2 :: CALL LOCATE(#S,R,TC):: NEXT R
170 CALL SPRITE(#S+2,40,16,TR,TC):: CALL
    DELSPRITE(#S):: FR=TR :: TR=FR+50 :: FOR R=FR TO TR
    STEP 2 :: CALL LOCATE(#S+2,R,TC):: NEXT R
180 Y=Y+1 :: IF Y=11 THEN CALL DELSPRITE(#S+2):: GOTO
    130 ELSE S=S+2 :: FC=TC :: FR=TR :: GOTO 140
```

Ian Swales in Belgium can write some of the most intricate routines, and pull them into the tightest knot. I had searched everywhere for a sorting routine for 2-dimensional arrays, and invented some ridiculous ones, before Ian sent me this jewel.

```
100 !DEMO of two-dimensional sorting routine
110 !Set up array to be sorted
120 CALL CLEAR :: DIM A$(20,4):: RANDOMIZE :: DEF
    X$=CHR$(26*RND+65)
130 FOR J=1 TO 20 :: A$(J,1)=X$&X$&X$ ::
    A$(J,2)=STR$(INT(100*RND+1))::
    A$(J,3)=X$&STR$(INT(10*RND))::
    A$(J,4)=INT(10*RND))&X$ :: NEXT J
140 INPUT "SORT BY?(1-4)":K
150 J=20 !2-dimensional array sorting routine by Ian
    Swales
160 DIM Q(20):: FOR X=1 TO 20 :: Q(X)=X :: NEXT X
170 M=0
180 FOR X=1 TO J-1 :: IF A$(Q(X),K)<=A$(Q(X+1),K)THEN
    210
190 M=-1
200 T=Q(X):: Q(X)=Q(X+1):: Q(X+1)=T
210 NEXT X
220 IF M THEN 170
230 FOR X=1 TO 20 :: FOR L=1 TO 4 :: PRINT A$(Q(X),L);"
    ";:: NEXT L :: PRINT :: NEXT X :: GOTO 140
```

Did you ever need a routine that would accept either a string or a numeric value? Try this :

```
100 N=0 :: ON ERROR 110 :: ACCEPT M$ :: N=VAL(M$)::
    GOTO 120
110 ON ERROR STOP :: RETURN 120
120 ON (N=0)+2 GOTO 130,140
130 PRINT M$ :: GOTO 100
140 PRINT N :: GOTO 100
```

A useful tip from Stephen Shaw in England. If you have a long program which will run only in BASIC, and which will load from disk with CALL FILES(1) but runs out of memory when you try to run it; and if you have the Mini Memory module :

Insert Mini Memory module, select BASIC, enter CALL FILES(1), Enter NEW, enter OLD DSK1.(filename). When loaded, enter SAVE EXPMEM2. When SAVEd, enter CALL LOAD(-31888,63,255), enter NEW, enter OLD EXPMEM2, and enter RUN. That is still a lot faster than loading a long program from tape!

Another reason for never using the default mode of so called UPDATE when opening a file (without specifying INPUT or OUTPUT) is that you will get an I/O ERROR 01 if the file is write protected.

Has anyone found a way to go from Extended BASIC to BASIC without losing the program in memory, or at least fouling it up? CALL LOAD(-32116,4) has been published in many newsletters as a way to do this, but has anyone actually made it work?

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

To make a note to yourself while programming, just type 1! and whatever you want to make note of, then LIST "PIO":1, and then type 1 and enter to delete the line.

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

One of the very best tips for this month comes from Paul A. Meadows, in the September 85 newsletter of TINS (Nova Scotia, Canada).

How to print up to 132 characters in a line (condensed print, of course) out of TI-Writer! Just prepare your file as usual but in line 0001 put formatter commands such as .LM10;RM132;IN+5;FI;AD. The Fill and Adjust are necessary, the Indent is up to you, as are the left and right margins, but notice that right margin set way over at 132?

Now, instead of saving the file with SF, type PF and then C DSK1.(filename) to print to the disk. This not only strips out the control C characters, it also erases the TI-Writer tab line that was applied to the last line of the file.

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

I have made the following changes to my working copy of the Tigercub Menuloader. This sets up my Gemini printer to skip over the perforations and print full page width in elite print with a wide left margin for ring-binder punching. Other printers may need changes in these codes.

```
620 DISPLAY AT(12,1)ERASE ALL:"PRINTER? PIO" :: ACCEPT
    AT(12,10)SIZE(-18):P$ :: GOSUB 895 :: PP=3
```

```
840 DISPLAY AT(24,1):"PRINTER NAME? PIO" :: ACCEPT
    AT(24,15)SIZE(-14):PP$ :: GOSUB 895 :: PRINT
    #2:SEG$(D$,1,4)&" - Diskname= "&N$
895 OPEN #3:P$,VARIABLE 132 :: PRINT #3:CHR$(27);"B";
    CHR$(2);CHR$(27);"M";CHR$(10);CHR$(27);"N";CHR$(6)
    :: RETURN
```

I always keep a backup of everything, on the flipped side of another disk, and I often want to verify that the backup has everything that is on the master, and vice versa.

```
100 DISPLAY AT(3,6)ERASE ALL:"TIGERCUB DOUBLECAT": :"
    To compare the contents of": :"a disk with a
    backup." !by Jim Peterson
110 DISPLAY AT(12,1):"INSERT MASTER DISK": :"PRESS
    ENTER"
120 CALL KEY(0,K,S):: IF S=0 THEN 120
130 DATA DF,DV,IF,IV,P
140 RESTORE :: FOR I=1 TO 5 :: READ T$(I):: NEXT I
150 DIM F$(127):: OPEN #1:"DSK1.",INPUT
    ,RELATIVE,INTERNAL :: INPUT #1:A$,J,J,K ::
    F$(0)=A$&" "&STR$(K)
160 X=X+1 :: INPUT #1:F$(X),I,J,K :: IF F$(X)="" THEN
    170 :: F$(X)=F$(X)&" "&T$(ABS(I)):: GOTO 160
170 X=X-1 :: CLOSE #1 :: DISPLAY AT(12,1)ERASE
    ALL:"REMOVE MASTER DISK": :"INSERT BACKUP DISK":
    :"PRESS ENTER"
180 CALL KEY(0,K,S):: IF S=0 THEN 180
190 OPEN #1:"DSK1.",INPUT ,RELATIVE,INTERNAL :: INPUT
    #1:A$,J,J,K :: DISPLAY AT(1,1) ERASE ALL:F$(0);::
    DISPLAY AT(1,15):A$&" "&STR$(K);
200 Y=Y+1 :: R=R+1 :: GOSUB 290 :: INPUT #1:A$,I,J,K ::
    IF A$="" THEN 260 :: K$=A$&" "&T$(ABS(I))
210 IF K$=F$(Y)THEN DISPLAY AT(R+1,1):F$(Y);:: DISPLAY
    AT(R+1,15):K$;:: GOTO 250
220 IF K$<F$(Y)THEN DISPLAY AT(R+1,15):K$;:: Y=Y-1 ::
    GOTO 250
230 DISPLAY AT(R+1,1):F$(Y); :: R=R+1 :: GOSUB 290 ::
    Y=Y+1
240 IF K$=F$(Y)THEN 210 ELSE IF K$<F$(Y)THEN 220 ELSE
    IF Y<X THEN 230 ELSE DISPLAY AT(R,15):K$;
250 GOTO 200
260 IF Y>X THEN 280
270 R=R+1 :: GOSUB 290 :: FOR J=Y TO X :: DISPLAY
    AT(R,1):F$(J):: R=R+1 :: GOSUB 290 :: NEXT J
280 DISPLAY AT(24,1):"      PRESS ANY KEY" :: CALL
    KEY(0,K,S):: IF S=0 THEN 280 ELSE CLOSE #1 :: END
290 IF R<23 THEN RETURN
300 DISPLAY AT(24,1):"PRESS ANY KEY" :: DISPLAY
    AT(24,1):" " :: CALL KEY(0,K,S):: IF S=0 THEN 300
310 CALL CLEAR :: R=1 :: RETURN
```

And that is just about memory full! Jim Peterson

This idea has been around for many years, editors of newsletters have been recommending file by file copying to achieve this optimum condition, Now Mike Dodd has made it easy for you. Do not expect great speed during the process and only do this to disks where files have been jumbled a lot. To find out if a disk requires a run through MCOPY use DSKU to look at sector one. If the FDRs are in order you will not need to use the program, if they are not then get cracking! Thanks Mike a nifty idea.

Sample #1 (A) before using MCOPY

```
Sector > 0001
Byte 0    2    4    6    8 etc.
0    0002 046B 0004 0483    "
2    0010 0011 0012 0013    "
```

Sample #2 (B) after using MCOPY

```
Sector > 0001
Byte 0    2    4    6    8 etc.
0    0002 0003 0004 0005 0006 etc
2    0010 0011 0012 0013 0014 "
```

Games Information

by Robert Brown and Stephen Judd

Welcome to Games Info, the articles that help you solve adventures, games etc.

Games must apologize for not writing some articles for a while, but since Robert has entered Year 11 and Stephen has entered Year 10, the work load has been heavy. Alas, no time to even turn on our beloved TI99/4A. But since we have had an Easter Holiday, we have been able to write this article and hopefully many more in store for the coming months ahead.

This month we look at Zork I (which was requested by a member), and hopefully in the coming months, we will finish the series with Zork II and Zork III and lots more Infocom adventures.

Here is an outline of the game and some advice about how to play the game.

Zork I solution

1. Aim of the Game

The aim is to gain 350 points by doing certain things and collecting 20 treasures. You have to find 19. The 20th, a map to the barrow, appears in the trophy case when the you have 350 points. Your score is continually in view in the top right hand corner, followed by the number of moves you have made. Points are awarded as follows: getting into the House (10); getting into the Cellar (25); getting past the troll (5); getting to the torch room (13); and getting into the treasure room (25). The treasures have points for touching and more points for placing them in the trophy case.

Treasure	Touch	Case	Location
jewel encrusted egg	5	5	in a nest up a tree on a Forest Path
clockwork canary	6	4	inside the egg
beautiful painting	4	6	in the Gallery
platinum bar	10	5	in the Loud Room
ivory torch	14	6	in the Torch Room
gold coffin	10	15	in the Egyptian Room
Egyptian scepter	4	6	in the gold Coffin
trunk of jewels	15	5	at the Reservoir
crystal trident	4	11	in the Atlantis Room
jade figurine	5	5	in the Bat Room
sapphire bracelet	5	5	in the Gas Room
huge diamond	10	10	you make it in the Machine Room
bag of coins	10	5	in the Maze
crystal skull	10	10	in the land of the living dead
jewelled scarab	5	5	buried in Sandy Cave
large emerald	5	10	in the buoy on the Frigid River
silver chalice	10	5	in the Treasure Room
pot of gold	10	10	at the end of the Rainbow
brass bauble	1	1	the songbird has it

2. The Forest

The Forest consists of 4 rooms labelled "Forest" having the same description and it is only possible to distinguish one from another by dropping things. They connect with each other and the Clearings and the Forest Path.

3. The Clearings

There are 2 Clearings in the Forest with slight differences. One is to the north of the Forest Path and contains a pile of leaves which hide a locked grating leading down to the grating room. However this can be unlocked, from below, with a skeleton key found in the maze with the dead adventurer, giving another access to the underground. The second Clearing leads to the back of the House on the east and the canyon view on the west, where it is possible to go down to a rocky ledge then down to the canyon bottom and north to the end of the rainbow. In both Clearings other directions lead to different parts of the Forest or are not viable directions.

4. The Forest Path

The Forest Path is north of "north of the House" and it is here that a large tree can be climbed. This reveals a bird's nest containing a jewel encrusted egg. To the north is the Clearing with the pile of leaves, south is "north of the House" all other directions lead to the Forest.

5. The House

The House, which is surrounded by the Forest and Clearings and Paths, consists of 3 rooms; a kitchen containing a glass bottle of water and a brown sack containing a lunch and a clove of garlic, a dark attic containing a rope and a "nasty knife" and a living room containing a trophy case, a lamp and a sword. All treasures are stored in the trophy case. The attic is up the stairs from the kitchen which is east of the living room. It is possible to go around the outside of the House and these positions are known by directions from the House except east which is called "behind the House". It is from behind the House that entry can be forced by opening a window, which leads to the kitchen. Entry to the underground is from the living room via a trap door which is under the rug and leads to the Cellar. This trap door will be locked after you descend unless you discover another exit from the caves, other than the chimney from the Studio which is a very tight squeeze.

6. The Cellar, East of Chasm, Gallery and Studio

Down from the living room is the Cellar, to the south is "East of Chasm" which leads east to the Gallery which in turn leads north to the Studio. The Gallery contains a painting which is a treasure while the Studio contains a piece of paper which is worthless except as a marker in the maze. From the Studio is a chimney leading to the kitchen, however this is very tight and is only one way. The Cellar connects to the north with the "Troll room" and has a slide (entry only) from the "slide room".

7. East-West Passage

The East-West Passage connects to the Troll Room to the west, the Chasm to the north and the Round Room to the east. There is nothing of importance in this room.

8. Round Room

The Round Room connects with the East-West Passage on the west, the North-South Passage to the north, the Narrow Passage to the south, the Engravings Cave to the south-east and the Loud Room to the east.

9. Loud Room

The Loud Room contains the platinum bar and connects with the Round Room to the west, the Damp Cave to the east and up to the Deep Canyon. It is called the Loud Room because of the noise of rushing water while the dam is full, this prevents any other command than getting out. To get the platinum bar either release the water from the dam or say "ECHO", both of these cause the noise to stop and the bar can then be picked up normally.

10. White Cliffs Beach and Damp Cave

White Cliffs Beach is divided into North and South, the northern end connects to the west with the Damp Cave (which connects with the Loud Room further west), while both beaches connect with the Frigid River to the east. The river can only be navigated if you have the boat.

Tigercub Public Domain Catalog

from Jim Peterson, Tigercub Software, USA

TI-PD public domain software for the TI99/4A computer, $1.50 per disk postpaid (minimum 8 disks please); number of sectors filled is indicated in parentheses). For a 9-page catalog listing all titles and authors, send $1 which is deductable from first order (specify TI-PD catalog). Offered as a copying service only, without warranty other than that copies are equal to the original. Make checks payable to Tigercub Software (no credit card orders). Send to Tigercub Software, 156 Collingwood Ave., Columbus OH 43213.

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Details for disks 600 to 633

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During the past 7 years, a great many programmers have contributed a wealth of material to the public domain. Unfortunately, most of these programs have not been readily available to most of the TI99/4A users. Only a few of the user groups have really large public domain libraries, and even these are usually catalogued only by alphabetized abbreviated filenames. The more isolated users have even less access.

I have therefore decided to make the contents of my public domain library available to the TI99/4A world, at a copying fee so low that I hope no one will think I am unfairly profiting from the work of others (and I think you will note, in the following listings, that I have probably contributed more to the public domain than anyone else!), but if any author objects to my distributing his work I will certainly stop. My catalog contains the author's name for each program, when available, both in order to give due credit and to aid in distinguishing between programs of the same name. Regrettably, many of the IUG programs distributed by Amnion have had the author's name deleted.

Fairware authors may reasonably object to anyone charging to distribute their work. I will therefore not offer any fairware unless I receive the author's express permission. I will not offer anything which bears a copyright notice unless I have definite information that the copyright has been abandoned or was not intended to preclude distribution. It is entirely possible that I may have obtained programs from which a copyright or fairware notice had been deleted, and I would appreciate being informed of any such in my catalog.

I have gone through my library of over 3600 public domain programs and selected enough of the better ones to fill over 200 disks, arranged by category. Each SS/SD disk contains as many programs as I could fit onto it, if I had enough programs of that category. The number of filled sectors on each disk is indicated in parentheses. All BASIC only programs have been converted to run in Extended BASIC (except those which use the Terminal Emulator II speech), and an Extended BASIC loader has been provided for assembly programs whenever possible. Each disk has been provided with an autoloader by full program name, not filename.

I have added instructions to a good many of these programs, and corrected any bugs that I noticed, but I cannot guarantee them in any way, and cannot offer to provide instructions, correct bugs or make modifications. I will of course replace any bad loads, and would appreciate being informed of any program which has serious flaws.

This public domain is offered only as a copying service, not as a sale of computer software, and I take no responsibility other than providing a copy equal to the original.

If I receive a worthwhile response to this offer, I will be adding more public domain and will be asking fairware authors if they want me to distribute their products. I am always willing to make exchanges for worthwhile public domain which is not in my catalog, and am particularly interested in getting more educational software above the primary level.

Note: Tigercub Software also publishes a catalog of over 120 original copyright entertainment, educational and utility programs at $1 each, plus full disk collections at $5, Nuts & Bolts of programmer's utilities, etc., etc. This catalog is $1, deductible from 1st order.

The following TI-PD disks are offered at $1.50 per disk, postpaid in the US and Canada; overseas customers add .50 per disk for airmail postage. Minimum order of 8 disks, please. Make checks payable to Tigercub Software.

600. SAM MOORE MUSIC #1 (341)
Amazing Grace; Berceuse; Bugle Boogie; Bumble Boogie; Doggone Boogie; Forest Roses; Main Screen Symposia; Ode to Puppytown; Variations on a Theme; Venus Night Rhapsody: Western Boogie; all by Sam Moore Jr.

601. SAM MOORE MUSIC #2 (343)
A 5th of Beethoven; Album Leaf; In the Mill; Just the Way You Are; Killing Me Softly; You Light Up My Life; Opus No. 23; Time In A Bottle; Yesterday; all by Sam Moore Jr.

602. SAM MOORE MUSIC #3 (348)
Boogie Oogie Oogie; Guitar; Moonlight Sonata; Nocturne; Oz Medley; Rondo; Sea-Bottom Sonata; The Melancholy Senorita; Venetian Boat Song #1; all by Sam Moore Jr.

603. SAM MOORE MUSIC #4 (337)
Big Cat Boogie; Sonata in C Major; Graymouse Rock; Kangaroo Waltz; Maple Leaf Rag; M*A*S*H 4077 Theme; Opus de Silencia; Snow Scene Musica; Love is a Many Splendored Thing; A Sunday Drive; Witches Dance; With Love In My Heart; all by Sam Moore Jr.

604. BILL KNECHT HYMNS (334)
Abide With Me; Blessed Assurance; The Lord's Prayer; Why Me; Jesus Saves; Just As I Am; Where He Leads Me; Holy Holy Holy; Church in the Wildwood; Softly and Tenderly; I Need Thee Every Hour; Rock of Ages; Closer Walk With Thee; Jesus Loves Children; Old Time Religion Medley; Love Lifted Me; I Love To Tell The Story; The Old Rugged Cross; Eternal Father; Christmas Medley; Finale; all by Bill Knecht.

605. CHRISTMAS MUSIC (318)
The First Noel, Hark The Herald Angels, God Rest Ye Merry Gentlemen, Silent Night (John and Pam Taylor); Holy Holy Holy, What Child Is This? (Bill Knecht); Silver Bells (Gerry Myers); I Heard The Bells On Christmas Day (Webber and Myers); Christmas Card (Gavin/DeLong); Twelve Days of Christmas; Christmas Collection (Merlin); Jingle Bells (C. Hagen); Away in a Manger; O Tannenbaum (W. Howe)

606. HOLIDAY MUSIC (339)
We Three Kings Of The Orient Are; Away In A Manger; Deck The Halls; Jingle Bells; Auld Lang Syne, all anonymous; Auld Lang Syne 1984 by Regena; Christmas Scene, Music by Elwood Bickerman III; Do You Hear What I Hear; Let It Snow; Rudolph The Red-Nosed Reindeer, by Clint Hagen; Hark The Herald Angels Sing by Brian Getbehead; Jesu, Joy of Man's Desiring by John Pam Taylor; Christmas Medley by the Ashcrofts and Tom Arnold; Snoopy's Christmas by Bill Christensen; Silent Night by Curtis and Cheryl Borders.

607. GREAT SONGS BY BILL KNECHT (351)
Mandy; Can't Help Falling; Sink The Bismarck; Lookin' For Love; Green, Green; Wings Of A Dove; Houston; Wedding Song; But You Know I Love You; Cool Water; The Lord's Prayer; Hallelujah Chorus; Star-Spangled Banner; Could I Have This Dance; all by Bill Knecht.

608. MUSIC BY BILL KNECHT (295)
One In A Million; Mr. Bojangles; Bridge Over Troubled Waters; Holiday Road; Let It Be Me; New Kid In Town; Please Please Me; Release Me; Rocky Top; Tumbling Tumbleweeds; Texas, Our Texas; all by Bill Knecht.

609. MARCH MUSIC (329)
Military Music, by Bill Knecht; Battle Hymn Of The Republic by Earl Dodd; Dixie by Jim Peterson; Hail To The Redskins by E.B. Washington Jr.; National Anthem by Norman Kolstad; Seventy Six Trombones and Yankee Doodle, both anonymous.

610. TIGERCUB COUNTRY (356)
Anytime; Candy Kisses; Columbia, Gem Of The Ocean; Dark As A Dungeon; Devil Woman; Dixie; Don't Worry; El Paso; Frankie Johnnie; Greensleeves; Home In Dreams; I Went To Your Wedding; Kojo No Tsuki; Seeing Nelly Home; Room Full Of Roses; San Angelo; Shenandoah; Tarnished Gold; Till I Waltz Again With You; Way Out There; Wildwood Flower; Wishing Star; all by Jim Peterson.

611. CHRISTMAS SING-ALONG (351)
Angels On High; Away In A Manger; Little Town Of Bethlehem; Deck The Halls; First Noel; God Rest Ye Merry Gentlemen; Hark The Herald Angels Sing; I Saw Three Ships; It Came Upon A Midnight Clear; Jingle Bells; Joy To The World; O Come All Ye Faithful; O Holy Night; Silent Night; O Tannenbaum. Author unknown; all with words on screen. Improved version with additional verses, better formatting, screen of falling snowflakes.

612. J.S. FOSTER MUSIC #1 (332)
America; Variation On Pachbel's Canon; Do-Re-Mi Song; Glendy Burk; Greensleeves; Irish Eyes; Puff The Magic Dragon; Train Lover; all by J. Stephen Foster.

613. J.S. FOSTER MUSIC #2 (317)
Greensleeves; Home Sweet Home; Marilyn Monroe; On Top Of Old Smoky; Down By The Riverside; Yesterday; all by J. Stephen Foster.

614. BACH MUSIC PROGRAMS (338)
Gavotte; March; Minuet #1; Minuet #2; Musette #1; Musette #2; Chorale; Polonaise; Gigue; Beside Thy Cradle; Sarabande; Jig; Jesu, Joy Of Man's Desiring. Author unknown.

615. SING-ALONG MUSIC (351)
Born Free (R. Lamson); I'm Forever Blowing Bubbles (Dodd/Peterson); Candy Man; Won't You Come Home Bill Bailey (R. Welham); Dear Old Girl; Fernando; I Cried For You; Mr. Bojangles; Sunrise Sunset; Tie A Yellow Ribbon (all anonymous), all with words on screen.

616. SOME OF THE BEST (343)
Beer Barrel Polka (Steve Waters); Five Foot Two; Harrigan; Lida Rose; Pass Me By; Pennsylvania Polka (all anonymous); Theme From M*A*S*H (A. Singer); Under The Double Eagle (D. Duffield)

617. CLASSICAL MUSIC (340)
Canon Of Purcell (Claire Arribet); Fugue by G.F. Haendl (T. Niemietz); Beethoven Medley (Regena); Beethoven's 9th Symphony (anonymous); Fur Elise (anonymous); Rhapsodies (Clint Hagen); Sonatina (Ron Albright); Strauss #1 (Corey); Valse (Waltz) In A Minor (anonymous); Sarabande (G.K. Cagle); Duet Spagnoletto (Stefen Dicks)

618. ASSORTED MUSIC (346)
Old Dog Tray (J.S. Foster); Love Boat; Calcutta; Do You Know The Way To San Jose (all by R. Welham); Fiddler On The Roof (Rickware); Impossible Dream (J. Clulow); America The Beautiful; Hungry Heart (both anonymous); Amazing Grace (C. Crowder); Popcorn Man (C. Green); Iowa Fight Song (W. Tjaden); Take It Easy (T.B> Berg)

619. CHOPIN'S POLONAISE OPUS #53 (280)
by Ken Gilliland. With improved LOAD program.

620. ASSORTED MUSIC #2 (351)
Long And Winding Road (R. Sabolcik); Joy To The World (Merlin); On The Inside (Allan Caswell); Theme From Country Practice (R. Welham); Theme From Star Trek (Clint Hagen); Texas Medley (Regena); Stairway To Heaven (Chuck Lyman); This Old Man (Phil Doyle); Trumpet Tune (J. Giurko); Theme From M*A*S*H; Phil's Tune; Raindrops Keep Falling (all anonymous).

621. HAMILTON USERS GROUP MUSIC PACKAGE #1 (346)
Auld Lang Syne; Cabaret; Camptown Races; Can Can; Chariots Of Fire; Christmas Carols; Composer; Death March; German D; For He's A Jolly Good Fellow; Mission Impossible; Oh Dear What Can The Matter Be; Over The Rainbow; Star Wars 1; Star Wars 2; Up Up And Away; Variations On A THeme; Zylophone; all by Stephen W. Johnson.

622. ASSORTED MUSIC #3 (349)
There's A New World Somewhere (K. Sheets); Bright Eyes (Batt/Dunlop); If I Fell (Varga); Here Comes Peter Cottontail (John Taylor); Jesu, Joy Of Man's Desire (John Clulow); 12th Street Rag; Maple Leaf Rag; Penny Lane; I'm Looking Through You (all anonymous).

623. A DISK FULL OF J.S. BACH (345)
Inventions #4 and #10 (K. Hillewaert); Two Part Invention #13, Two Part Invention #8 (Sonny Grubb); Invention in D Minor, Invention in f (John Clulow); Invention #13 (Jeff Gatlin); Polonaise in G Minor (R. Thacker); Praeludium II (Gomez Falkin); Bach 3. Minuet, Bach Minuet in B Flat, Here is Bach, Prelude #1 In C, Sonata In F #5 (all anonymous).

624. ASSORTED MUSIC #4 (358)
My Old Kentucky Home (L. Baessler); Silver and Gold Waltz (B. Batchelor); Stardust (Bill Bader); Tales From The Vienna Woods (D. Ulmer); Wreck Of Old 97 (O.F. Ray); Raindrops Keep Falling (R. Welham); and Tribute To J.F. Kennedy, Stop To Smell The Flowers, Let Me Call You Sweetheart, Show Me The Way To Go Home, Sensation, Sweet and Low, Foggy Mountain Breakdown, and Theme From "Dallas", all anonymous.

625. ASSORTED MUSIC #5 (347)
Are You Lonesome Tonight (Earl Dodd); And I Love Her (A. Arizpe); Bewitched (D. Ulmer); Songs Of Texas (J.C. Loghry); Swinging Shepherd Blues (C. Whitelaw); Alley Cat (D.W. Irvine); Adventures Of Ivan (B. Fishman); Deep Purple (B. Bader); and On The Robert E. Lee, Hot Lunch Jam, Musical Kaleidoscope and Saturday.

626. JOHANN SEBASTIAN BACH MUSIC (340)
Three Part Invention #2 (R. Albright); Invention In F (J. Keating); Prelude #2 In C Minor, Fugue #2 In C Minor and Invention #8 In F (B. Palmer); Minuet In G Minor (anonymous).

627. ASSORTED MUSIC #6 (354)
Romance De Castilla (J. Trinkel); Shaded Velvet (Jeff Gatlin); Meet Me In St. Louis, Louis (Earl Dodd); Theme From Star Trek (Clint Hagen); 12th St. Rag (E.L. Bowman); Dueling Banjos (S. Larson); Carolina Moon (Dodd/Peterson); Never On Sunday, Those Were The Days and Sunflower Slow Drag (anonymous).

628. SOME OF THE VERY BEST (349)
Yes We Have No Bananas (J. Stephen Foster); House Of The Rising Sun (Gilchrist/Peterson/Traver); Toccata In D Minor (Gilchrist); Wedding Song (John Taylor); Baby Elephant Walk (R. Welham); Dizzy Fingers (Paul Templar); Solfeggietto and Pink Panther (anonymous).

629. OLLIE HEBERT'S MUSIC (340)
Peter Gunn, King Cotton March, Alley Cat, When The Saints Go Marching In, Stars And Stripes Forever and Music Box Dancer (O. Hebert); O Tannenbaum (Walt Howe); Rainbow Connection (D. Jessel); Aunt Dinah's Quilting Party (Peterson/Hebert)

630 GREGORY RASHALL'S MUSIC MASTER (287)
2099: A TI Odyssey; A Mighty Fortress Is Our God; Alleluia; Galveston; Ghost Riders In The Sky; Hard Luck Woman; In The Mood; William Tell Overture; all by G. Rashall.

631. ASSORTED MUSIC #7 (352)
Thriller (B.S. Waddell); Day Of Resurrection (William Miller); And I Love Her (A. Arizpe); Michael's Theme (Harry Stoneham); and Send In The Clowns, We Are The World, Disney's Main Street Parade, Give A Little Whistle, Be Still My Soul, Midnight Cowboy, Nadia's Theme, and Bewitched Bothered And Bewildered all anonymous.

632. SONATA FOR PIANOFORTE (222)
Opus V #1, #2 and #3, from a menu, fantastic music in assembly, pianoforte and flute. Author unknown.

633. SONATA FOR PIANOFORTE Opus V #1, #2, #3, #4, #5, #6 Archived; requires a double-sided disk to unpack. o

Magoo's Mumblings

Ooh! You've done it again Mr. Magoo!
Coffs Harbour Regional Group

The greatest binary binder and soliloquizer, the redoubtable Magoo!

Mr. Magoo who looks like you know who but plays better golf, is the know all and the originator of all things relating to the TI99/4A. If it is a bug you are after Magoo has met him, he has visited every Long Bay Pentridge and Alcatraz LOCKUP known in the magnetic field. He "Wrote the Book" and he is the "been there done that" of our TI99/4A world. Let him tell you some of the things that have come his way in recent TIMES.

Multiplan Module Tips by Magoo.

When running Multiplan from a RAMdisk bring up Extended BASIC and type CALL AF and <ENTER> followed by BYE, up comes the Title Screen. Then remove Extended BASIC and insert the Multiplan module and space bar gives

1 BASIC
2 MULTIPLAN

Magoo knew that inserting the Multiplan module after the Title Screen was the only way to go.

Another Magoo gem was that C DSK1.FILE will not remove the text format commands from your file unless it is in the PF Mode. He knew SF only came up with I/O ERROR CODE = 15. Magoo advocates reading the manual for saving time, frustation and money.

"Oh, Magoo, you have done it again!"
****
Subtracting in hexadecimal looks easy

It all adds up says Mr Magoo. Starting from the left may seem odd but it achieves the purpose of simplicity, with a little practice.

The rules for subtraction are:-
Look to the right and if the lower symbol is larger add one to your figure then count how many must be added to reach your goal. That number is the difference we are seeking.

To achieve a relaxed state of mind we only add. We do not have to remember if we had borrowed a figure or reduce it by one, as in simple decimal subtraction. Let us try it now.

Start from the left and look right at column two. 4 minus E. E, whose value is 14 decimal, is larger than 4 so we add 1 to the symbol 0 in column one making it 1. Now 1 plus 6 equals 7 so that our difference figure is 6.

```
    >7402
 -  >0EF0        .         .
    >6512    0123456789ABCDEF
             789ABCDEF012345
                  ^       ^

             C TO 3  = 7 Moves.
             DEF0123 = 7           `
             .
             C+1234567 moves.
                DEF0123
```

Repeating the exercise, start looking at column two (right) and apply the rule.

E is larger than 4 so add 1 to 0 in column 1 making it 1. Now 1 plus 6 is 7. Write down the difference figure 6 in the first column.

Starting with a clear mind, look at column 3. Applying the rule again:-
F is larger than 0 so add 1 to E, making it F. Now F plus: first move is to 0, second to 1, third to 2, fourth to 3 and fifth to 4 (which is our goal) making the difference 5 (five moves). Write 5 down in the second column.

Dismiss from your mind the past figuring and with a clear view look at 0 and decide if 0 is more than 2? If not forget it.

Return your mind to F and count the moves until you reach 0, which is one move away, so the difference is 1. Write 1 in column 3.

Zero plus 2 moves gives your goal 2 in column 4.

This system works very well in decimal for those of you for whom subtraction has been a bugbear in the past.

Mr Magoo, give him his due, does not claim to be the originator of this style of computing, however the writer is indebted to the unknown author.   o

11. Engravings Room and Dome Room

The Engravings Room is connected to the Round Room to the north-west and the Dome Room to the east. The Dome Room is connected to the Engravings Room on the west and is above the Torch Room. Entry to the Torch Room is by tying the rope (from the attic) to the railing and going down, however it is not possible to return via this path.

12. Torch Room

The Torch Room contains an Ivory Torch, this is not only a treasure but a useful source of light. It is reached via a rope from the Dome Room, however it is not possible to return via this path. The only exit from this room is to the Temple in the south.

13. Temple including the Altar

The Temple is large with a north end, which connects with the Torch Room to the north and the Egyptian Room to the east, and a south end containing an Altar. The northern end of the Temple contains a brass bell (needed to get the Crystal Skull) and and odd wall which is magically connected with the Thief's Treasure Room. To get from either the Temple or the Treasure Room say the name of the other room. South from the northern end of the Temple Room is the Altar, with a hole to the west which connects with the Cave. However this is a tight squeeze and is only one way. Near the Altar are the candles and a black book (both needed to get the Crystal Skull). Praying at the Altar gets you above ground with whatever you were carrying and also allows you to continue playing after being killed. When you are killed you become a spirit and need to go to the altar Again and pray (if you have prayed previously) this resurrects you above ground however your possessions are scattered, treasures below ground and non-treasures above ground.

14. Egyptian Room

The Egyptian Room is east from the Temple and contains a Gold Coffin (a treasure) which when opened holds an Egyptian Scepter (another treasure but also needed at the Rainbow). Due to the large size and weight of the coffin the only way to get it to the Trophy Case is to carry it to the Altar and pray. The only exit from the Egyptian Room is west to the northern end of the Temple.

Now, here are some clues:-

* A trophy case is for trophies
* Save the game when in the Cyclops Room
* Put your torch in the bucket in the Shaft Room to light the Machine Room
* Do not take a flame into the Gas Room
* If you are sent to Hades as a ghost, make your way to the Altar for a reincarnation
* The scepter has a direct relationship with the rainbow. Try waving it.
* Even a deranged vampire bat hates garlic(*)
* A sound, a light and a prayer call found in the temple area can dispel the spirits
* You need a boat to travel the frigid river (*)
* To cross the reservior, you must drain the dam. To open the dam, press one of the buttons and turn the bolt.
* The Cyclops is hungry. to avoid becoming a snack, say ODYSSEUS
* The coffin and platinum bar are especially heavy, so only carry the torch when collecting them
* Never tackle the thief except in the treasure room and then give him all the treasures you are carrying to slow him down. Kill him with the Nasty Knife
* Make sure you give the thief the jewelled egg early in the battle so he can open it to reveal the clockwork canary
* Dig in the sandy cave
* Get off the frigid river after you get the buoy
* To return to the Forest, pray at the altar

* Turn the bolt with the wrench then drop it
* Red turns on light
* Do not press the blue or the brown.
* Yellow enables control panel
* Save the game and try to throw the rusty knife.

And do not forget you can write to GAMES INFO at the following address.
Robert Brown
C/- Games Information
141 Beecroft Road,
Beecroft 2119.
or leave a message on the BBS under GAMES. Please note that a written letter will be answered first, as we do not have time to ring the BBS unless on holidays.
Until next time.   o

TIsHUG Shop with Stephen Carr

Hello again. The AGM is over for another year, and for the next 12 months I will be holding the fort. So far I think that I have been around to most of the regional groups in the Sydney Area and hope to continue doing this throughout the year to come.

The Shop special until all sold is 2 boxes of blank disks plus a disk storage box for $30. Also blank disks are now $10 for a box of 10.

We have still some stock of the popular Inscebot Software from the US, which includes the popular TI-Base, still for $25, TI-Artist, Artist Extras and Slide Show to display TI-Artist drawings for $15 each.

I would like to hear from you, the members, on what you would like the shop to stock and sell, some ideas are printer ribbons, printer paper, cables etc. You can assist us in this by letting me or any of the directors know what you want for consideration.

That is all for now and hope to catch up with you all either at the main meeting or a regional meeting. o

The files created when saving modules to disk for use with the P-GRAM are compatible with files saved by the GRAM Kracker and Cart Saver program. Thus, modified modules used with other devices can also be used on the P-GRAM. The P-GRAM can be used just liked a "Super Cart" Module (an Editor Assembler module with 8K of RAM). This allows the user to run the growing number of programs requiring this type of module. However, the P-GRAM's memory is not limited to running modules. The memory can be used for any application requiring RAM or GRAM memory. A full 56K of memory is available for use in the module memory space. I have used the P-GRAM for about a week with Super Extended BASIC and so far have had not one lock up of any type. Not even a RAMdisk. o

201	INDICATE	216	OF	231	JAR
202	SIMILAR	217	NEED	232	ON
203	WANT	218	REMOVED	233	WASHED
204	ITEMS	219	PULL	234	MUST
205	YOU'LL	220	DO	235	THIS
206	JETCAR	221	PREVENT	236	ATTACHING
207	CATALYST	222	GLOVE	237	ONLY
208	LIQUID	223	HYDROMETER	238	AVAILABLE
209	GAS	224	NICADS	239	MINERAL
210	BOMB	225	SHED	240	ME
211	ONE	226	GENERATING	241	SAMPLES
212	FIND	227	AS	242	IT
213	AN	228	CODE	243	BRING
214	AFTER	229	BE	244	INSIDE
215	WHEN	230	FROM	245	HAND o

Tips from the Tigercub #55

by Jim Peterson, Tigercub Software, USA

Tigercub Software
156 Collingwood Ave.
Columbus OH 43213

I am still offering over 120 original and unique entertainment, educational and utility programs at just $1 each, or on collection disks at $5 per disk.

The contents of the first 52 issues of this newsletter are available as ready to run programs on 5 Tips Disks at $10 each.

And my three Nuts & Bolts Disk, $15 each, each contain over 100 subprograms for you to merge into your own programs to do all kinds of wonderful things.

My catalog is available for $1, deductable from your first order (specify TIGERCUB catalog).

****

TI-PD LIBRARY

I have selected public domain programs, by category, to fill over 200 disks, as full as possible if I had enough programs of the category, with all the BASIC only programs converted to Extended BASIC, with an Editor Asembler loader provided for assembly programs if possible, instructions added and any obvious bugs corrected, and with an autoloader by full program name on each disk. These are available as a copying service for just $1.50 postpaid in US and Canada. No fairware will be offered without the author's permission. Send self addressed stamped envelope for list or $1, refundable for 9 page catalog listing all titles and authors. Be sure to specify TI-PD catalog.

****

The Tigercub has dipped a cautious paw into the cold dark mysterious waters of assembly, while still keeping a firm grip on trusty old Extended BASIC. The result is an Extended BASIC program that writes an assembly program!

The following subprogram, when merged into any program which has reidentified characters, and called after the characters have been reidentified, will write a source code which can be assembled into object code, loaded from Extended BASIC and linked to instantly access the character set.

The source code is based on 2FONTS/S by Barry Traver, who gives credit to Mac McCormick, David Migicovsky and Karl Schuneman.

```
19000 SUB CHARSUB(HX$())
19001 DISPLAY AT(12,1)ERASE ALL:"Source code filename?"
      :"DSK" :: ACCEPT AT(13,4)SIZE(12)BEEP:F$ :: OPEN
      #1:"DSK"&F$,OUTPUT
19002 DISPLAY AT(15,1):"LINKABLE program name?" ::
      ACCEPT AT(16,1)SIZE(6):P$
19003 DISPLAY AT(18,1):"Redefine characters from
      ASCII    to ASCII"
19004 ACCEPT AT(19,7)VALIDATE(DIGIT)SIZE(3):F
19005 ACCEPT AT(19,21)VALIDATE(DIGIT)SIZE(3):T
19006 PRINT #1:TAB(8);"DEF";TAB(13);P$ :: PRINT #1:"VMBW
      EQU >2024" :: PRINT #1:"STATUS EQU >837C"
19007 NB=8*(T-F+1) :: CALL DEC_HEX(NB,H$):: A=768+8*F ::
      CALL DEC_HEX(A,A$)
19008 FOR CH=F TO T :: IF CH<144 THEN
      CALL CHARPAT(CH,CH$) ELSE CH$=HX$(CH)
19009 IF FLAG=0 THEN PRINT #1:"FONT";::: FLAG=1
19010 FOR J=1 TO 13 STEP 4 ::
      M$=M$&">"&SEG$(CH$,J,4)&"," :: NEXT J ::
      M$=SEG$(M$,1,23)&" *"&CHR$(CH)
19011 PRINT #1:TAB(8);"DATA "&M$ :: M$="" :: NEXT CH
19012 PRINT #1:P$;TAB(8);"LI R1,FONT" :: PRINT
      #1:TAB(8);"LI R0,>"&A$ :: PRINT #1:TAB(8);"LI
      R2,>"&H$
19013 PRINT #1:TAB(8);"BLWP @VMBW":TAB(8);"CLR
      @STATUS":TAB(8);"RT":TAB(8);"END" :: CLOSE #1
19014 SUBEND
19015 SUB DEC_HEX(D,H$)
19016 X$="0123456789ABCDEF" :: A=D+65536*(D>32767)
```

```
19017 H$=SEG$(X$,(INT(A/4096)AND 15)+1,1)&
      SEG$(X$,(INT(A/256)AND 15)+1,1)&
      SEG$(X$,(INT(A/16)AND 15)+1,1)&
      SEG$(X$,(A AND 15)+1,1):: SUBEND
```

Now to try it out. You probably know that CALL CHARSET will restore reidentified characters below ASCII 96 to normal form, but not those above, so let us write a routine to restore those. Clear the memory with NEW, merge in the above, which you should have SAVED with:

SAVE DSK1.CHARSUB,MERGE
by MERGE DSK1.CHARSUB.

Add a line:

100 CALL CHARSUB(HX$())

and RUN. Answer the filename prompt with DSK1.OLDLOW/S, the next prompt with OLDLOW and select ASCII 97 to 127.

When done, insert the Editor Assembler module and its disk Part A. Select Assembler, Y to load assembler, give the source code DSK1.OLDLOW/S, object code DSK1.OLDLOW/O, just press Enter at next prompt, and R for options. You should get 0000 ERRORS.

Now key in this routine to test your program.

```
100 CALL INIT :: CALL LOAD("DSK1.OLDLOW/O"):: FOR CH=33
    TO 126 :: CALL CHAR(CH,"FF818181818181FF"):: PRINT
    CHR$(CH);:: NEXT CH
101 CALL KEY(0,K,S):: IF S=0 THEN 101 ELSE CALL CHARSET
102 CALL KEY(0,K,S):: IF S=0 THEN 102 ELSE
    CALL LINK("OLDLOW")
110 GOTO 110
```

Press any key to restore the upper case characters by CALL CHARSET, any key again to use the CALL LINK.

You are now ready to use the routine to copy all kinds of character sets from the programs in your library. You do not have any such programs? Not to worry. You do not have to reidentify characters one by one with one of those graphics editor programs. You can just manipulate the existing hexadecimal codes of the normal characters. I have created nearly 50 different character sets by that method!

The space occupied by a character on the screen is really an 8x8 square of 64 tiny dots. Various dots are turned on (coloured) and off (transparent) to create a pattern, just the opposite of light bulbs on a scoreboard.

And those on and off dots are really the binary numbers which the computer uses. But fortunately the computer lets us use hexadecimal numbers rather than binary. The following will print out a reference chart of decimal to binary to hexadecimal. You can easily convert it to dump to a printer.

```
10 DISPLAY AT(6,1)ERASE ALL:"DEC BIN HEX"
100 FOR J=0 TO 15 :: CALL DEC_BIN(J,B$)::
    CALL DEC_HEX(J,H$)::
    DISPLAY AT(J+8,1):J;TAB(5);B$;TAB(10);SEG$(H$,4,1)
    :: NEXT J
21020 SUB DEC_BIN(D@,B$):: D=D@ :: IF D=0 THEN B$="0000"
    :: SUBEXIT
21021 IF D=1 THEN 21022 :: X=D/2 ::
    B@$=STR$(ABS(X<>INT(X)))&B@$ :: D=INT(X):: IF D>1
    THEN 21021
21022 B@$="1"&B@$ :: B$=RPT$("0",4-LEN(B@$))&B@$ ::
    B@$="" :: SUBEND
21039 SUB DEC_HEX(D,H$)
21040 X$="0123456789ABCDEF" :: A=D+65536*(D>32767)
21041 H$=SEG$(X$,(INT(A/4096)AND 15)+1,1)&
    SEG$(X$,(INT(A/256)AND 15)+1,1)&
    SEG$(X$,(INT(A/16)AND 15)+1,1)&
    SEG$(X$,(A AND 15)+1,1):: SUBEND
```

And this routine will show you how each letter is formed, by binary 0's (off) and 1's (on), for each key you press. I put it in merge format so you can MERGE it into any program and CALL it to examine the characters.

```
17000 SUB CHARVIEW
17001 !programmed by Jim Peterson Feb 1989
17002 DISPLAY AT(1,1)ERASE ALL:"CHARACTERS IN BINARY &
      HEX"::::"Press any key to see the    binary
      representation of thescreen character and its
      hexcode."
17003 DISPLAY AT(8,1):"Press Enter to see the char-acter
      ."
17004 CALL KEY(0,K,S):: IF K=13 THEN 17005 ELSE IF S=0
      OR K<32 OR K>143 THEN 17004 ELSE 17007
17005 CALL CHAR(48,"FF"&RPT$("81",6)&RPT$("FF",9))
17006 CALL KEY(0,K,S):: IF S<1 THEN 17006 ELSE
      CALL CHAR(48,"003844444444444380010301010101038")::
      GOTO 17004
17007 CALL CHARPAT(K,CH$)
17008 R=12 :: FOR J=1 TO 15 STEP 2
17009 H$=SEG$(CH$,J,1):: CALL HEX_BIN(H$,B$)
17010 DISPLAY AT(R,8):B$
17011 H$=SEG$(CH$,J+1,1):: CALL HEX_BIN(H$,B$)
17012 DISPLAY AT(R,12):B$ ::
      DISPLAY AT(R,18):SEG$(CH$,J,2):: R=R+1 :: NEXT J ::
      DISPLAY AT(22,6):CH$ :: GOTO 17004
17013 SUBEND
17014 SUB HEX_BIN(H$,B$):: HX$="0123456789ABCDEF" ::
      BN$="0000X0001X0010X0011X0100X0101X0110X0111X1000X
      1001X1010X1011X1100X1101X1110X1111"
17015 FOR J=LEN(H$)TO 1 STEP -1 :: X$=SEG$(H$,J,1)
17016 X=POS(HX$,X$,1)-1 :: T$=SEG$(BN$,5*X+1,4)&T$ ::
      NEXT J :: B$=T$ :: T$="" :: SUBEND
```

And to reidentify a character, you just change the
numbers and letters in the 16 digit hexadecimal code
which represents the binary pattern. By writing little
routines to switch those digits around, all kinds of
things can be done.

For instance, the normal characters always have the
top row of dots turned off, to provide spacing between
lines of text on the screen.   If you want taller
characters you will have to double space the lines, but
you can create them by making the numerals and upper
case characters consist of the 2nd to 7th rows, the 7th
row again, and the 8th row. It just happens to work
out.

```
18000 SUB HIGHCHAR :: FOR CH=48 TO 90 :: CALL
      CHARPAT(CH,CH$):: CALL
      CHAR(CH,SEG$(CH$,3,10)&RPT$(SEG$(CH$,13,2),2)&
      SEG$(CH$,15,2)):: NEXT CH :: SUBEND
```

I made that a subprogram so you can MERGE it in and
use it to modify other character sets.

If we take the hexadecimal code apart, 2 digits at
a time, and reassemble it backwards,

```
100 CALL CLEAR :: FOR CH=33 TO 90 ::
    CALL CHARPAT(CH,CH$):: FOR J=1 TO 15 STEP 2 ::
    CH2$=SEG$(CH$,J,2)&CH2$ :: NEXT J ::
    CALL CHAR(CH,CH2$):: CH2$="" :: NEXT CH
110 DISPLAY AT(12,1):"?NWOD EDISPU":"VT EHT DENRUT OHW !
    YEH" :: GOTO 110
```

That one was in my first Tips newsletter, years
ago, but it is much more effective at assembly speed.

This one shades characters on their left edge by
turning on the pixel to the left of the leftmost "on"
pixel,   if any.   Also try it in combination with
HIGHCHAR.

```
18001 SUB NEWCHAR3 :: FOR CH=48 TO 122 :: CALL
      CHARPAT(CH,CH$):: FOR J=1 TO 15 STEP 2
18002 CH2$=CH2$&SEG$("0367CDEF",POS("01234567",
      SEG$(CH$,J,1),1),1)&SEG$(CH$,J+1,1):: NEXT J ::
      CALL CHAR(CH,CH2$):: CH2$="" :: NEXT CH :: SUBEND
```

This one uses HIGHCHAR to heighten the character
and then blanks out three rows. Try following it with
NEWCHAR3.

```
18030 SUB NEWCHAR10 :: A$="00" :: FOR CH=48 TO 90 ::
      CALL CHARPAT(CH,CH$):: CH$=SEG$(CH$,3,10)&
      RPT$(SEG$(CH$,13,2),2)&SEG$(CH$,15,2)
```

```
18031 CH$=SEG$(CH$,1,4)&A$&SEG$(CH$,7,2)&A$&
      SEG$(CH$,11,2)&A$&SEG$(CH$,15,2)::
      CALL CHAR(CH,CH$):: NEXT CH :: SUBEND
```

The next one, which works only on ASCII 97-122,
makes tall characters ridiculously elongated above.

```
18050 SUB NEWCHAR20 :: FOR CH=97 TO 122 ::
      CALL CHARPAT(CH,CH$):: CALL CHAR(CH,SEG$(CH$,7,2)&
      RPT$(SEG$(CH$,9,2),4)&SEG$(CH$,11,6)):: NEXT CH ::
      SUBEND
```

This one has the characters raised by one line,
widened one column at left and two columns at right to
make a full 8x8 character which must be double-spaced
horizontally and vertically.

```
18090 SUB NEWCHAR27 :: FOR CH=48 TO 122 ::
      CALL CHARPAT(CH,CH$):: CH$=SEG$(CH$,3,10)&
      RPT$(SEG$(CH$,13,2),2)&SEG$(CH$,15,2):: FOR J=1 TO
      15 STEP 2
18091 CH2$=CH2$&SEG$("014589CD",POS("01234567",
      SEG$(CH$,J,1),1),1)&
      SEG$("0129",POS("048C",SEG$(CH$,J+1,1),1),1)
18092 NEXT J :: CALL CHAR(CH,CH2$):: CH2$="" :: NEXT CH
      :: SUBEND
```

Those who have my Nuts & Bolts disks will see how
valuable this assembly can be to make instantly
available the routines for double height and double
width characters, etc., etc. And if you have Todd
Kaplan's amazing ALSAVE routine from the Genial Traveler
Vol. 1 No. 3, you can imbed them in your Extended BASIC
program for fast loading.

And you can merge CHARSUB into any character editor
or   sprite   defining   program and, with a bit of
modification, use it to convert your crea- tions into
fast-loading assembly.

These assembly loads are compatible with my BXB, so
you can also load character sets into sets 15 and 16,
ASCII 144-159.   However,   the CHARPAT statement cannot
access ASCII above 143, so in this case you must dim-
ension an array in the program you are copying from, as
DIM HX$(159), and place the hexadecimal codes in the
array using the ASCII as the subscript number, such as

CALL CHAR(CH+64,CH$) :: HX$(CH+64)=CH$

so that they will be passed to the subprogram. And do
not CALL INIT after you have called BXB!

So, now you try creating your own screen fonts!

Memory full, Jim Peterson   o

TI-Base Tutorial

by Terry Phillips

The Spirit of 99, the newsletter of the Central
Ohio 99'ers, is currently carrying an excellent tutorial
on TI-Base. Both the February and March issues, which
were received during last week, contain the first
instalments of the tutorial series, which are written by
Martin Smoley of the Northcoast 99'ers (USA). These
articles are the best I have read on TI-Base, and their
timely arrival is appropriate for the April meeting when
TI-Base is a topic for discussion.   I for one, was
struggling with trying to write a COMMAND file to
produce mailing labels, but with the   information
provided it was a simple matter to set up such a file
and produce the mailing labels from TI-Base for the next
mailing of the News Digest. My only complaint was, that
to produce the 240 labels took about 25 minutes printing
time.   Perhaps there is a more efficient COMMAND file
than the one I wrote. I will keep trying. Here it is
listed below, substitute your own field descriptors for
the ones I have used. There are about 10 pages in the
tutorial. I will photocopy some for the April meeting.
   Regards to all, Terry Phillips
                    ****

P-GRAM card review

by Larry Saunders

```
Performance........A++++
Ease of Use........A+
Documention........A-
Value for money....A+++
Final Grade........A+
```

Manufacturer: Bud Mills Services
      166 Dartmouth Drive
      Toledo Ohio
      USA, 43614

Price US$150 Complete Kit plus postage and handling
    $170 With Clock plus postage and handling
    $180 Fully Assembled plus postage and handling
    $200 With Clock plus postage and handling

Postage and handling US$5 Surface
          $15 Airmail
Round trip airmail about 4 to 5 weeks.

First in this review a bit of news from John Johnson.
   MENU Version 7.35 is provided for those of you have a Horizon RAMdisk.
   11 February 1989

Temporary documentation for MENU follows.

OK, I know you folks are getting tired of waiting for 7.4, so I thought. I would upload this updated MENU. It is still a 7.3 MENU, but the "*" items below indicate improvements or additions.

Active keys on main screen:

Key	Action
* D	Deletes a file
* G	Cycles through all GROMs, name next to C.
* I	Toggles the Extended BASIC colour interrupt routine on or off.
* K	Calls a routine - does a CALL
* X	Runs an Extended BASIC program only.

If 'D' is pressed, you will be prompted for a filename, and then you can press enter to delete the file, or FCTN[9] to abort the delete.

I put in a routine that can be accessed by pressing X from the main screen. This will allow you to run any Extended BASIC program or I/V 254 file. So if you would like to run one of those big Extended BASIC files, just hit X, type the filename, and away you go.

OK, and this is a biggie, you can now edit your user options' filename like this:

X DSK*.FILENAME
   and when you press that option, it will automatically go into the Extended BASIC load routine just like the X option above. Yes, you can now use those big I/V 254 Extended BASIC files as menu items.

Or,
C CALLNAME

C MGR will run DM1000 if it is in the CFG screen as 3 MGR with the files on the root or first DSK* of the RAMdisk. You will notice that the third screen is now available as user options instead of the ROS's CALLnames. Most will welcome the extra nine options but some will miss having their CALLs available. Well, you can now put a CALLNAME in a user option as in the above example. Also, the CALL MGR and CALL TD routines are no longer used, but you can use this feature (example: C MGR) or use the 'K' option to run your call.

You can still press and hold the SHIFT key down when going into Extended BASIC to carry your colours with you, but now, the default action can be tailored to your preference by pressing the 'I' key. Be sure and save MENU (with FCTN[5] FCTN[9]) to make your preference permanent.

I have recently received a P-GRAM card from Bud Mills Services, and I was so impressed by the quality of the card and its usefulness, that a lot of the changes made to MENU were done to take advantage of the P-GRAM.

The 'C' option looks through all possible GROM addresses and will cycle through them as you press 'G'. I have the Extended BASIC and Editor Assembler cartridges in the P-GRAM, and to toggle between them I just press G. Also, you will notice that on cartridges with multiple title names, you will cycle through them also instead of just catching the first one. Even if you do not have a P-GRAM, this option allows you to run any of the 7 headers in TI-Writer, for example.

I do not want to sound like a commercial for Bud, but I have been really impressed by only two products in the last 6 years. I wrote about the first one when I received Horizon RAMdisk serial number 10, and I plan on uploading impressions of this P-GRAM soon.

More to come from the MUG. JJ

Now for the review.

What is a P-GRAM?

The P-GRAM is a card for the Peripheral Expansion System that adds 72K of battery-backed memory to the TI99/4A (40K GRAM, 16K bank switched module RAM, and 16K bank switched DSR RAM). This memory is added in place of the ROM memory used for module software. The P-GRAM allows you to save modules to disk and then load them into the P-GRAM's memory to be used. Once a module has been saved to disk or loaded into the P-GRAM, it will not be needed again. The computer cannot tell the difference between a module loaded into the P-GRAM and one inserted into the computer. Since the P-GRAM's memory is maintained by a battery, the contents of the P-GRAM will remain even if the computer is turned off.

The real time clock option provides the computer with the time, date, and day of week information. The optional clock is compatible with software written for either the MBP clock card or CorComp's Triple Tech and 9900 Stand Alone clocks thus providing compatibility with a wide range of existing clock based software. The clock is the same as the Grand RAM clock. Using the new version of MENU (V7.35), if you have the Triple Tech card and turn on the P-GRAM or Grand RAM clock you will see two clocks on the MENU one below the other. When you run most utilities, games etc., you will see the clock displayed up in the top right hand corner.

What can the P-GRAM card do?

The P-GRAM may be used to emulate almost any module (including Extended BASIC, Editor Assembler, Multiplan, TI-Writer, Super Extended BASIC, and lots of others. This not only provides a backup of each module you currently own but puts an end to frustrating problems caused by "flaky" modules (eg Super Extended BASIC) and worn ports.

The software required to save and load modules is part of the P-GRAM's operating system and is loaded when the card is installed. A few key strokes are all that are needed to call up a menu driven program that allows you to use any P-GRAM feature (eg CALL PG). Since the P-GRAM uses RAM and GRAM memory to store modules, it can also be used to modify them using an very advance memory editor that is part of the P-GRAM's operating system. This allows bugs to be fixed (such as printer and RAMdisk incompatibilities) and new features can be added or software can be customized to fit your specific needs. You no longer have to be satisfied with whatever was programmed into the original module. the P-GRAM allows you to change and improve things that you never could before.

Multifont Printer Control

by Lou Amadio

The Multifont Control program attached, originally came from Geoff Trott. I have modified it to allow control over the basic features found in most printers. It is possible to easily modify this program to include any other feature that your printer provides. Check your printer manual.

The program allows for 18 on screen selections. Some of the selections eg emphasised and double strike, may be used at the same time. The best way to find the limitations of your printer is to experiment.

The program runs in Extended BASIC. Lines 130 to 140 set up the screen colours, in this case white (16) on dark blue (5). You may substitute your favourite colour combination from the selection on page 199 of the Extended Basic manual.

Line 150 "OPENs" the communication line to the printer. The ".CR" appended to "PIO" prevents any unwanted printer line feeds during the selection process.
Lines 180 to 360 show the selection options.
Lines 370 to 390 ensure that only a valid number (0 to 18) is accepted by the program. Avoid pressing "ENTER" without a keyboard entry as BASIC will scroll the screen and issue an error message.
Line 400 redirects program execution to one of the listed lines depending on the option chosen (0 to 18).
Lines 410 to 580 contain the actual codes which control the printer. You may find it useful to verify some of these control strings with the data in your printer manual.
Line 590 indicates that a command has been sent to the printer.
Line 600 contains a delay loop (1 to 250) to give you time to read the message in line 590. Do not try to select another option until the message disappears
Line 610 issues an error message if the entered number is outside the specified range.

If you intend to work in Extended BASIC after running the program, you may wish to add the following line:

```
620 CALL INIT :: CALL LOAD(-31952,255,231,255,231)
```
The CALL LOAD automatically erases the program from memory.

If you have a RAMdisk, you may want to run the program from your MENU. Adding the following line will automatically return you to the MENU program:

```
620 DELETE "MENU"
```

```
100 !MULTIFONT CONTROL PROGRAM
110 !Modified by Lou Amadio
120 !31 August 1988
130 CALL CLEAR :: CALL SCREEN(5)
140 FOR I=1 TO 14 :: CALL COLOR(I,16,5):: NEXT I
150 OPEN #1:"PIO.CR"
160 DISPLAY AT(1,1):"*** DOT MATRIX PRINTER ***"
170 DISPLAY AT(2,1):"Multi-Font Control Program"
180 DISPLAY AT(4,1):" 0 - Exit This Program"
190 DISPLAY AT(5,1):" 1 - Draft Quality Print"
200 DISPLAY AT(6,1):" 2 - Double Strike - ON"
210 DISPLAY AT(7,1):" 3 - Double Strike - OFF"
220 DISPLAY AT(8,1):" 4 - Emphasised - ON"
230 DISPLAY AT(9,1):" 5 - Emphasised - OFF"
240 DISPLAY AT(10,1):" 6 - Condensed Print - ON"
250 DISPLAY AT(11,1):" 7 - Condensed Print - OFF"
260 DISPLAY AT(12,1):" 8 - Superscript - ON"
270 DISPLAY AT(13,1):" 9 - Subscript - ON"
280 DISPLAY AT(14,1):"10 - Super/Subscript - OFF"
290 DISPLAY AT(15,1):"11 - Double Width - ON (38 CPL)"
300 DISPLAY AT(16,1):"12 - Double Width - OFF"
310 DISPLAY AT(17,1):"13 - Skip 9 Lines"
320 DISPLAY AT(18,1):"14 - 1/6 Line Spacing"
330 DISPLAY AT(19,1):"15 - 1/8 Line Spacing"
340 DISPLAY AT(20,1):"16 - 7/72 Line Spacing"
350 DISPLAY AT(21,1):"17 - Set Top Of Form"
360 DISPLAY AT(22,1):"18 - Reset Printer"
370 DISPLAY AT(24,1):"Please Enter a Number " ::
    ACCEPT AT(24,23)VALIDATE(DIGIT)SIZE(2): A
380 IF (A<0 OR A>18)THEN 610
390 IF A=0 THEN 620
400 ON A GOTO 410,420,430,440,450,460,470,480,490,
    500,510,520,530,540,550,560,570,580
410 PRINT #1:CHR$(27)&"@";:: GOTO 590 !DRAFT
420 PRINT #1:CHR$(27)&"G";:: GOTO 590 !DOUBLE STRIKE
430 PRINT #1:CHR$(27)&"H";:: GOTO 590 !CANCEL DOUBLE
    STRIKE
440 PRINT #1:CHR$(27)&"E";:: GOTO 590 !EMPHASISED
450 PRINT`#1:CHR$(27)&"F";:: GOTO 590 !EMPHASISED OFF
460 PRINT #1:CHR$(15);:: GOTO 590 !CONDENSED
470 PRINT #1:CHR$(18);:: GOTO 590 !CONDENSED OFF
480 PRINT #1:CHR$(27)&"S"&CHR$(0):: GOTO 590
    !SUPERSCRIPT
490 PRINT #1:CHR$(27)&"S"&CHR$(1):: GOTO 590 !SUBSCRIPT
500 PRINT #1:CHR$(27)&"T";:: GOTO 590 !RESET SUPER/SUB
510 PRINT #1:CHR$(27)&"W"&CHR$(1);:: GOTO 590 !DOUBLE
    WIDTH
520 PRINT #1:CHR$(27)&"W"&CHR$(0);:: GOTO 590 !CANCEL
    DOUBLE WIDTH
530 PRINT #1:CHR$(27)&"N"&CHR$(9);:: GOTO 590 !SKIP 9
    LINES
540 PRINT #1:CHR$(27)&"2";:: GOTO 590 !1/6" LINE
    SPACING
550 PRINT #1:CHR$(27)&"0";:: GOTO 590 !1/8" LINE
    SPACING
560 PRINT #1:CHR$(27)&"1";:: GOTO 590 !7/72" LINE
    SPACING
570 PRINT #1:CHR$(27)&"C"&CHR$(0)&CHR$(11); :: GOTO 590
    !SET TOP OF FORM
580 PRINT #1:CHR$(27)&"@";:: GOTO 590 !RESET
590 DISPLAY AT(1,1):" " :: DISPLAY AT(1,1): "Command
    Executed"
600 FOR D=1 TO 250 :: NEXT D :: DISPLAY AT(1,1): "***
    DOT MATRIX PRINTER ***" :: GOTO 370
610 DISPLAY AT(1,1):"Invalid Option - Try Again" :: FOR
    D=1 TO 350 :: NEXT D :: GOTO 370
620 END                                              o
```

Myarc Rumours

### taken from Asgard News Volume 1 Number 3
by Rolf Schreiber

Sales of the Myarc Geneve supposedly have stalled because of the scarcity of Geneve specific software, as well as the lack of support from software manufacturers (tied to the lack of technical documentation on the Geneve from Myarc). While this would have been disastrous a few months ago, now that Myarc has a hit with its HFDC card, they have evidently lowered the priority of Geneve development. Discussions with several Geneve dealers confirm that the general impression is that Myarc is not planning much further development beyond the projects explicitly announced, and that even many of those will never see the light of day. Further, Myarc is scaling back promotion of the machine to concentrate resources on the highly profitable HFDC. Because of the many headaches the machine has caused, Myarc could be tempted to abandon it if it does not become profitable again. Some of the headaches involving the machine were apparently self-inflicted; there are critical bugs in the hardware itself that make using more than 512K in the machine difficult and more than 1MB impossible. Without a lot of interest in the machine, it is not in Myarc's interest to spend a lot of money to correct them. Since M-DOS software tends to be large anyway, this could put severe restraints on the future viability of M-DOS. After trying to work with it, several software developers would like to just throw M-DOS away and develop a new, more memory-efficient DOS. However, without a large base of available machines, such an approach could never be done except on a hobbyist level. The chicken before the egg problem continues to haunt the Myarc Geneve.   o

Standardizing Marks with Multiplan

by Robert Relyea

For anybody who teaches and/or uses Multiplan regularly, this article may be of some use. As an HSC teacher I have need of standardizing students' grades in order to conform to the system used in compiling HSC examination marks. 'Standardizing' means to organize marks (or any set of numbers) according to a particular system so that they will consistently convey the same meaning (or weighting), and be, as statisticians would say, 'statistically relevant'. Two terms are used in regards to standardizing marks:

1) Average (mean). This is found by adding up all the marks and then dividing by the number of marks. This can be accomplished by Multiplan as it has an AVErage function. All two-unit HSC courses are scaled to a state wide average of 60%. Often in statistics books the average is designated by $\bar{x}$.

2) Standard Deviation. Marks can be 'arranged' to deviate from the average by a certain amount. The formula for calculating the standard deviation manually is a little complicated but Multiplan does it quickly as it has a standard deviation function (STDEV). If, for example, you obtain a set of marks whose standard deviation is 15, this means that 68% of the marks are within 15 marks of the average. The last information that I have suggests that the current STDEV for HSC marks is 12.5, which means that 68% of the marks are 60% +/-12.5 or between 47.5% and 72.5%. On a normal curve this would look like the following:
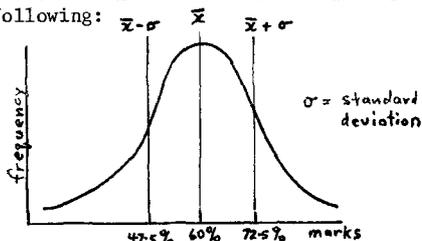
Standardizing a set of marks, then, means to rearrange them to an agreed average and standard deviation. This is where the problem enters. How do you take a set of scores whose average may be 65 and standard deviation is 25.4 and rearrange them so that the average and standard deviation are 60 and 12.5 respectively? The statistical way to go about it is to do the following to each mark:

1) Subtract the old mean,
2) Divide (1) by the old STDEV,
3) Multiply (2) by the desired STDEV,
4) Add to (3) the desired mean.

This can all be accomplished with Multiplan by the following steps:

1) List the original set of marks down a column (eg column 2),
2) Put a name on the column of marks,
3) Find the average of the scores by using the AVE function. Before you use this function place the cursor on the cell where you want the result to appear. If you want the result rounded to the nearest whole number, then do it this way:

INT(AVERAGE(NAME)+0.5)

Note: the 0.5 must be added so that it rounds off properly.
Suppose this result is placed in cell R11C2 (see example at the of the article).

4) Find the standard deviation of the marks using:

ROUND(STDEV(NAME),1)

The STDEV gives the standard deviation and the ROUND(N,1) rounds it to one decimal place. Place the result in cell R13C2.

5) Put a name on the column where the standardized marks are to be placed.

6) Use the formula below to calculate the standardized mark of the mark at the top of the column. In the example below this would be equivalent to finding the standardized mark for 95. To do this, place the cursor on the cell to the right of the first mark. Using VALUE, type in the formula:

INT((12.5*((RC[-1]-R11C2)/R13C2)+60)+0.5)

7) Use copy (down) to calculate the standardized marks for the remaining marks. When prompted, Number of Cells is one less than the number of marks since you have already done the first one. However, Copy from the top of the column (R4:9C3). Place the cursor on the original cell (R4C3) before using Copy.

Try typing in the following example (columns 1 and 2) and see if you can arrive at the same results for column 3.

	1	2	3
		OLD	STD
1			
2	NAME	MARK	MARK
3	Jones	95	75
4	Smith	47	51
5	O'Reilly	72	63
6	Olsen	57	56
7	Buckley	28	42
8	Watkins	88	71
9			
10	AVERAGE	65	60
11	STDEV	25.4	12.5

I get along to most of the monthly meetings, so if you have trouble, make yourself known. Happy computing!

Extended BASIC Grade Standardizer

by Robert Relyea

For those of you without Multiplan, here is an Extended BASIC version of grade standardizing. The advantage that it has over the Multiplan program is that it is much faster and it offers you a choice of whether you want an instant print-out of the results or not. Try typing the program in and having a go at it.

```
100 CALL CLEAR
110 REM ROBERT RELYEA THE OAKS NSW AUSTRALIA 2570 120
    CALL SCREEN(14)
130 PRINT TAB(7);"******************"
140 PRINT TAB(7);"*                *"
150 PRINT TAB(7);"*     GRADE       *"
160 PRINT TAB(7);"*  STANDARDIZER   *"
170 PRINT TAB(7);"*                *"
180 PRINT TAB(7);"******************"
190 PRINT
200 PRINT TAB(9);"By Bob Relyea"
210 PRINT
220 PRINT "THIS PROGRAM CALCULATES THE MEAN AND STANDARD
    DEVIATION OF A SET OF MARKS,"
230 PRINT "AND THEN STANDARDIZES THEM TO A MEAN AND
    STANDARD DEVIATION OF YOUR CHOICE."
240 PRINT :: PRINT
250 PRINT "JUST ANSWER EACH QUESTION AS IT COMES."
260 PRINT :: PRINT
270 PRINT "PRESS ANY KEY TO CONTINUE."
280 CALL KEY(0,K,S)
290 IF S=0 THEN 280
300 CALL CLEAR
310 INPUT "HOW MANY MARKS DO YOU WISH TO ENTER? ":N
320 DIM A(60), X(60)
330 FOR I=1 TO N
340 CALL CLEAR
350 PRINT :: PRINT
360 PRINT "ENTER MARK ";I
370 INPUT X(I)
```

```
380 T=T+X(I)
390 SQL=X(I)*X(I)+SQL
400 AVE=INT(T/I)
410 NEXT I
420 CALL CLEAR
430 PRINT :: PRINT
440 PRINT "  TOTAL MARKS=  ";T
450 PRINT
460 PRINT "  NO. OF MARKS= ";I-1
470 PRINT
480 PRINT "  AVERAGE =      ";AVE
490 REM *****************
500 REM    STDEVIATION
510 REM *****************
520 Z1=SQL
530 Z2=T*T/(I-1)
540 Z3=I-2
550 STD=(Z1-Z2)/Z3 :: PRINT
560 PRINT "  STAND. DEV = ";INT(SQR(STD))
570 NSTD=SQR(STD)
580 PRINT :: PRINT :: PRINT
590 PRINT "PRESS ANY KEY TO CONTINUE."
600 CALL KEY(0,K,S)
610 IF S=0 THEN 600
620 CALL CLEAR :: PRINT
630 PRINT :: CALL SCREEN(9)
640 PRINT "WE WILL NOW STANDARDIZE YOUR MARKS!" :: PRINT
    :: PRINT
650 INPUT "ENTER THE DESIRED MEAN- ":M :: PRINT :: PRINT
660 INPUT "ENTER THE DESIRED STD- ":D
670 CALL CLEAR
680 DISPLAY AT(10,5):"DO YOU WANT TO HAVE A"
690 DISPLAY AT(12,3):"PRINT-OUT OF THE RESULTS?"
700 DISPLAY AT(14,11):"(Y OR N)"
710 INPUT H$
720 IF H$= "Y" THEN 750 ELSE GOSUB 1030
730 CALL CLEAR
740 GOTO 1210
750 CALL CLEAR
760 DISPLAY AT(12,5):"MAKE SURE YOUR PRINTER"
770 DISPLAY AT(14,3):"IS ON"
780 DISPLAY AT(20,4):"PRESS ANY KEY WHEN READY"
790 CALL KEY(0,K,S) :: IF S=0 THEN 790
800 CALL CLEAR
810 OPEN#1:"RS232.BA=300.DA=8.PA=N"
820 PRINT#1:"OLD MARK STANDARDIZED MARK"
830 CLOSE#1
840 OPEN#2:"RS232.BA=300.DA=8.PA=N"
850 PRINT TAB(7);"STANDARDIZED"
860 PRINT TAB(7);"OLD MARK";TAB(18);"STDMARK"
870 FOR I=1 TO N
880 Y=X(I)-AVE
890 Y1=Y/NSTD
900 Y2=Y1*D+M
910 Y2=INT(10*Y2)/10
920 PRINT TAB(9);X(I);TAB(19);INT(Y2)
930 PRINT#2:TAB(3);X(I);TAB(18);INT(Y2)
940 IF I/18=INT(I/18)THEN GOTO 950 ELSE GOTO 990
950 INPUT "PRESS ANY KEY TO CONTINUE":E$
960 IF E$="ENTER" THEN 980
970 PRINT#2:TAB(3);X(I);TAB(18);INT(Y2)
980 CALL CLEAR
990 NEXT I
1000 PRINT :: PRINT :: PRINT
1010 CLOSE#2
1020 GOTO 1210
1030 CALL CLEAR
1040 PRINT TAB(7);"STANDARDIZED MARKS" :: PRINT
1050 PRINT TAB(7);"OLD MARK";TAB(18);"STDMARK"
1060 FOR I=1 TO N
1070 Y=X(I)-AVE
1080 Y1=Y/NSTD
1090 Y2=Y1*D+M
1100 Y2=INT(10*Y2)/10
1110 PRINT TAB(9);X(I);TAB(19);INT(Y2)
1120 IF I/20=INT(I/20)THEN GOTO 1130 ELSE GOTO 1160
1130 INPUT "PRESS 'ENTER' TO CONTINUE":B$
1140 IF B$="ENTER" THEN 1150
1150 CALL CLEAR
1160 NEXT I
1170 PRINT :: PRINT :: PRINT
1180 PRINT " PRESS ANY KEY TO CONTINUE"
1190 CALL KEY(0,K,S) :: IF S=0 THEN 1190
1200 RETURN
1210 PRINT "DO YOU WISH TO STANDARDIZE ANOTHER SET OF
     MARKS? (Y OR N?)"
1220 INPUT D$
1230 IF D$="Y" THEN 300
1240 IF D$="N" THEN 1250
1250 CALL CLEAR
1260 DISPLAY AT(15,10):"BYE FOR NOW!"
1270 CALL SCREEN(11)
1280 FOR Y=1 TO 300 :: NEXT Y
1290 END                                    o
```

Letter to the Editor

from Lou Amadio

I refer to an article on page 21 of the April 1989 TND titled "Tiger's Tale" in which Harry Brasher (from Asgard News) writes on the much discussed subject of payments to software authors for fairware programs. It has taken me a long time to come to grips with this subject, probably due to the fact that I use very few fairware programs (being mainly a hardware hacker). However the above article reminded me that fairware authors are a very important source of software for our computer. We should therefore support them in their efforts in order to increase the probability of them staying with the TI99/4A.

Look over your current software collection, particularly those programs that you use regularly, and add up what the authors are asking for them. I will bet that it does not even begin to compare with the cost of just one program for the IBM PC. Why then are we so reluctant to part with a few dollars in order to guarantee the future availability of software?

What options do we have available to us? Harry Brasher suggests that everyone sends $1 (yes one dollar) to each software author whose products that they use in some way or other. If you have 20 good programs, this amounts to only $20. Now I am not suggesting that this is all that you send, but it is a start, and, as Harry points out, if everyone did it, the authors might just take notice and not be offended. For those programs that you use regularly, make an extra effort and send $10 (or more) to the author. Do it while you think of it, because if you put it off, you will probably not do it until it is too late.

However, sending $1 is expensive (conversion costs, postage etc.) and this is where the TIsHUG Directors could help. They could send a lump sum, amounting to $1 for each club member, to the top 20 software authors. The money could come out of club funds (no use keeping money in the bank for a rainy day that may never arrive). The authors would receive an immediate compensation with more to come later from individual users. The Directors should determine if there are sufficient funds in the club's bank account to support this idea.

If necessary, I am willing to put up say $10 to $20 per month provided that a satisfactory way of sending it to the authors could be organised.

In summary, then, my suggestions are:

1) TIsHUG to send a cheque consisting $1 for each member to the top 20 fairware authors.

2) All TIsHUG members to send at least $10 to each software author for programs in regular use. This payment could be directed through a special club sub-committee.

Footnote:
In writing this letter I was reminded of a statement made late last year in the TND that only one person in Australia has sent a contribution to Barry Boone for his Archiver fairware program . Has anyone else responded since then? I have not, but not because I do not think that the program is not worth it, but basically because of laziness. Let us all make a conscious effort this year before it is too late.   o

Bug Report

TI-Writer and Formatter

from Geoff Trott

I should first state that I am a regular user of TI-Writer and appreciate it as a very good word processor when combined with the Formatter. I have graduated to the Funnelweb version because of all the features which make its use so much easier and because some of the really nasty bugs have been removed by Tony and Will McGovern. So the bugs that I will be talking about are the things that are bugging me, in that they could be cleaned up with a bit of effort, or others will be more like hints for doing things which have made my life easier but which could get you into trouble if you are not careful.

The one thing that frustrates me the most about the Editor, is its inability to find or replace a string which includes the slash /. There is no easy way to change "X/B" to "Extended BASIC" for example. I get around some of these problems by using the spelling checker which will do this for me. It would have been just as easy to not have a special character but use the first character as the string delimiter. That is, the two strings could be delimited by any character (except a number or space) which would be the first character on the line or after a number (or numbers) and space. It could be ;X/B;Extended BASIC; or 'X/B'Extended BASIC' for example.

While on Replace String, do you know how to include control characters in the search or replace strings? When in command mode you can change to the three modes possible in TI-Writer; word wrap, non word wrap and special character mode. The cursor changes to reflect which mode you are in. This is useful as sometimes you can make a lot of work for yourself by making changes in word wrap mode without first putting in end of paragraph markers <cr>. Before you press ENTER, you can change the mode to non word wrap while still in command mode. To get back to my original question, if you enter special character mode while entering a string, you can insert the <cr> character in a string with CTRL[U] CTRL[M] CTRL[U] to return from special character mode. Notice that this is not the same sequence that would give <cr> if you were in the edit buffer, although that also works. I use this to change a period, exclamation mark, question mark or colon followed by three spaces into the same punctuation mark followed by two spaces and <cr> to insert those missing end of paragraph markers. Another way to find the paragraphs is to use the column limits to change multi-spaces at the end of a line to <cr>. Doing this in word wrap mode does not cause problems because the reformat only applies to the line on which the <cr> is inserted.

The fact that if a string is replaced in word wrap mode causes the paragraph from that point to the end of the paragraph to be reformatted can be used to automatically reformat a whole document. Just do a replace string to a reasonably frequently occuring character or string back to itself and either do all or step through the file doing selected ones to reformat the whole document.

The other annoyance in TI-Writer is in remembering when it will actually insert a <cr> in response to ENTER, and when it will not. After a reformat, the ENTER key will not cause a <cr> to be inserted, whereas after an insert command (FCTN[2]) it will always insert a <cr>. At other times it depends a bit on where the cursor is. At the bottom of the file ENTER will usually cause <cr> to be inserted, while in the middle of text, especially with the cursor on a letter rather than a space, it will tend not to insert <cr>. If you want a <cr> then press CTRL[8] and from then on ENTER will also give <cr> until you start using the cursor movement keys. It is all a bit too hard to work out sometimes and leads to an annoyance.

If you place the cursor on top of a <cr> and start typing, the <cr> symbol remains under the cursor as it moves to the right until you reach the right margin, when it disappears.

If you are reformatting then a space is usually inserted on the end of the line on which the cursor is on. This means that to rejoin a hyphenated word, for example, you would have to delete a space. If reformatting after an insert command (FCTN[2]) however, the next line joins at the cursor which can be anywhere. If the cursor is on a word then a space will be left. If the cursor is on a space to the right of all the other letters on the line then that is where the next line goes to as long as it fits in the cursor line. Doing an insert command gives you control over where the reformatted data will start. Try it and see.

If you do not like windowing then the solution is to set the margins using the Tab command to 0 and 39 and then disable the line numbers (FCTN[0]). This stops windowing but you only get 39 characters on the screen because as soon as the 40th character is typed the cursor goes to the next line. If you set the right margin to 40 then when you type the 41st character the screen windows and then the cursor moves to the next line carrying the unfinished word if necessary. This way you get 40 characters across the screen but have to put up with the windowing. Cannot win on this one unless you type in on 0 to 39 and then reformat all to be from 0 to 40. One exception to this is if you have a <cr> at the end of a line on the screen. If you do not leave a space between the <cr> and the previous character, then the <cr> is counted as part of the previous word and so may cause a wrap. If there is a space there then the <cr> may be past the right margin and the line will not wrap if the word itself fits. Moral: always put a space before typing ENTER.

This leads to the first 'bug' which involves the Formatter. When centering some text, the Formatter takes no notice of the actual characters being centered. Thus a <cr> on the end of the line becomes part of the character string to be centered, but does not actually get printed. If you follow my advice on spaces before <cr>s in the previous paragraph then the spaces also become part of the string and as they are not printed, the centering appears to be far too far to the left to be correct. There is another error with the centering algorithm which does not work out the number of characters between the margins correctly. It appears to think that there are only 39 characters with margins set to 0 and 39. When actually justifying the text it gets it correct and prints to 40 column positions. This further puts the centering calculation out, but only by one character position. The thing is they all add up the same way. Talk about Murphy being around! You can help by putting defined spaces in front of the string and or removing the <cr> from the end. Of course the string to be centered must all be on one editor line and when counting the number of lines to be centered you must include the blank ones as well.

When putting formatter commands in your text, the first one on a line must start with a '.' and subsequent ones are separated by ';'. Those that need numbers may have spaces between the command and the number (or + or -), but the spaces are not necessary. However, if you put spaces after the numbers those commands will not work. This must be checked at the end of the line between the last number and the <cr>. I use the following first line on most of the TND documents '.LM0;RM55;FI;AD;PL440;CE2<cr>'.

If you do not want page breaks to appear in your output you can use the '.PLn' command, with n as large as you need. If you do not want the blank lines and form feed at the end of a document, put a '.PLn' as the last statement in the document where n is a single digit. This will cause the output to end abruptly with just a single <lf>.

What is GIF?

by Darren Telford

Introduction

CompuServe has developed a new Graphics Interchange Format (GIF) designed to serve a wide variety of graphics needs both within the CompuServe product environment and as a universal standard by which graphics can be exchanged between any parties through a network. This document serves as a simple explanation of what GIF is and what it is capable of.

What is GIF?

GIF (pronounced "Jif") is a mechanism of storing high-quality colour graphics images in a way that can be exchanged between users of differing hardware. For example it allows images created on an Atari ST to be displayed on a Commodore Amiga or IBM-PC and vice versa. The GIF format allows for very high resolution, full colour images that can be used in any application that requires the display of graphics information.

What Kind of Images can GIF be Used For?

GIF images can be part of, but not limited to the following applications:
- Full colour associate photo board
- Business charts and graphics
- Merchandise catalogs
- Technical documentation
- Schematic diagrams for field service personnel
- Colour radar maps
- Medical illustrations
- Art gallery
- Exchange of user-created images

How Much Resolution Can an Image Have?

In terms of pixels, or image dots, GIF is capable of defining images of over 16,000 by 16,000 individual dots. This compares with the average microcomputer screen of 320 by 200 pixels. Even laser printers are generally limited to about 2000 by 3000 pixels. GIF technology is adequate for graphics applications for years to come.

How Many Colours Can a GIF Image Have?

Any GIF image can have up to 256 simultaneous colours contained within it. Each individual colour can be defined out of a possible set of 16 million colours, making photographic-quality images possible.

Does This Mean an IBM-PC Cannot Display GIF Images with 256 Colours?

All GIF images can be processed by all GIF software. The software is designed to make the best use of a specific hardware's capabilities with regard to colours. A best match is made between a desired colour in the image, and the possible colours the hardware can display. Generally, detail of an image will be lost, but it should still be recognizable. On the other side, any image originating from an IBM machine should display exactly on a more capable microcomputer.

How Large are the Image Files in GIF?

This will vary a great deal depending on the number of colours present, the size of the image and the amount of detail present. GIF uses a sophisticated compression method that reduces the file size to between 1/2 to 1/8 of the original file size of the image. This means that even complex images can be economically downloaded. An example is an Atari ST image file of 320 by 200 pixels and 16 colours which would require 32,000 bytes on the Atari might only require 8,000 bytes in GIF format, a space savings of 4 to 1.

What microcomputers can Support GIF?

Currently CompuServe has developed software for a number of microcomputers to display or create GIF format files. Additional hardware will be supported as time goes on. The GIF standard document will be made public and third party authors will be encouraged to create additional GIF software for other hardware. Machines supported currently include:
- IBM-PC/MS-DOS family with CGA or EGA graphics boards
- Commodore Amiga
- Atari ST
- Macintosh family

The software files can be found in the appropriate hardware FORUMS and in the Picture Support Forum (GO PICS).

Where are the GIF Files that can be Displayed?

Currently many GIF files are available in DL2 of the Picture Support Forum. Each appropriate hardware forum will also accumulate GIF files as time goes on. The CompuServe FORUM software has a GIF file type established for uploads of GIF image files. o

```
CLEAR <ENTER>
CLOSE ALL <ENTER>
MODIFY COMMAND LABELS1 <ENTER>
```

The above 3 commands CLEAR the screen, CLOSE ALL open data bases and bring up the editor for entering of the COMMAND file.

****

```
* COMMAND FILE LABELS1
SET TALK OFF
SET RECNUM OFF
SET HEADING OFF
SET LINE=80
SET PAGE=0
CLEAR
LOCAL TEMP C 40
LOCAL BLNK C 1
USE MEMBERS {MY DB NAME}
SORT ON Sort {SORTS FOR POSTAL MAILING}
TOP
WHILE .NOT.  (EOF)
  REPLACE TEMP WITH Memb# | " " | Sort |; " " | Expires
  PRINT TEMP
  REPLACE TEMP WITH TRIM(FName) | " " |; LName
  PRINT TEMP
  PRINT Address
  REPLACE TEMP WITH TRIM(Place) | " " |; State | " " |
    P'Code
  PRINT TEMP
  PRINT BLNK
  PRINT BLNK
  MOVE
  ENDWHILE
CLOSE ALL
SET TALK ON
SET RECNUM ON
SET HEADING ON
SET PAGE=56
RETURN
```
I found I had to SET PAGE = 0 to suppress spurious line and form feeds. Maybe you will not have to with your printer. Also by printing 2 times BLNK the next label was correctly moved up to start the print sequence. Do not type in anything inside the { }. The ";" means that it is a long line and will not fit in the 40 column editor. It tells TI-Base to expect more on the next line. The "|" means concatenate, the same as "&" in Extended BASIC.

When all is typed press FCTN[8] to save the command file. To execute type in DO LABELS1 <ENTER>. All being well it should work and start producing mailing labels. If it does not then have a fiddle around. It goes without saying, make sure you are using back up disks, when playing around with this procedure. o

Turbo Pasc 99 Tutorial
Part 1

by Stephen Shaw, England

My first article on Turbo Pasc 99 (a Life simulation) was perhaps a little over the top, but once I had TP99 it made me very happy and excited to be able to write something like this!

This article is going to start a tutorial which I hope will show you that TP99 is an extremely easy language to actually use, and by no means difficult to program in. The better a TI BASIC programmer you are, the easier you will find TP99. And looking at TP99 may even make you a better TI BASIC programmer!

We are going to start with a program every TI99/4A owner has, from the manual supplied with the console. Look up GOTO in your manual and you will find a little TI BASIC program:

```
100 REM HOW MANY GIFTS ON THE 12 DAYS OF CHRISTMAS?
110 GIFTS=0
120 DAYS=1
130 COUNT=0
140 COUNT=COUNT+1
150 GIFTS=GIFTS+1
160 IF COUNT=DAYS THEN 180
170 GOTO 140
180 DAYS=DAYS+1
190 IF DAYS<=12 THEN 130
200 PRINT "TOTAL NUMBER OF GIFTS IS";GIFTS
210 END
```

(The total number of gifts is 78).

That is a fairly short program to convert, but by no means simple as you will see.

To start off using TP99, first insert your Editor Assembler module. At the time of writing TP99 insists on using only this module as direct access is made to the ROM. You can also use (as I do) a Super Space module, which has the Editor Assembler ROM inside it.

Select the Editor Assembler option 5. RUN PROGRAM FILE and with your TP99 disk in drive number one, press ENTER. This will automatically load the file UTIL1 and the following files, which contains the editor and the compiler.

The opening screen will tell you that your workfile is empty, and the cursor is down at bottom left (quite invisible on my TV set, which cuts off that left hand column!).

Type in ED and press enter. The cursor is now at top right (still invisible to me!). If you cannot see it, press space bar a few times!

Now you are ready to type in the code which follows. You can type it all in with the alpha lock in the up position, and do not need to use the SHIFT key at all. The capitals you see listed have been put there automatically by the TP99 editor.

The left hand column margin is set from the column you start typing. All subsequent new lines will start off underneath the first character of the last line, unless you move the cursor with the arrow keys.

The indentations in the listing are not required, but help you to follow the code, and are in general accordance with the usual Pascal practice. The most common error in typing TP99 code in is omitting those semicolons at the end of so many of the lines. They are essential! And you may experience a little difficulty with the equals sign. Note that we have here used := (colon equals). There is a little more to it than that but let us keep it easy this time!

In transferring the BASIC code to Pascal, there is one difficulty. Pascal does not have a GOTO, nor any means of branching back into previous code. Indeed, BASIC is a little unusual in allowing such freedom to jump backwards and forwards, and for that reason meets with some hostility from professional programmers! That does not concern us, what does is making the transfer!

Examining the BASIC program, there are three jumps, so we can connect with arrowed lines a jump form 160 to 180, and two backwards jumps, from 170 to 140 and from 190 to 130.

To deal with the backward jumps we have to use one of the LOOPing procedures in Pascal, and have quite a variety:

DO WHILE, FOR...NEXT, and REPEAT UNTIL.

As with BASIC, there are many ways of doing the same thing, and what I show here is just one way of converting the BASIC program. There are other equally valid ways.

As we have two backward jumps, that means two loops, an inner loop (140 to 170) which increments COUNT and DAYS. The loop is controlled by a test of equality between COUNT and DAYS.

The outer loop (130 to 190) in addition to the inner loop, resets COUNT=0, increments DAYS, and in controlled by testing the value of DAYS against a value of 12.

Outside these loops we have the variables initialised and the result printed.

Now let us take a look at how that can be put into Pascal code:

```
PROGRAM xmasgifts;

VAR gifts,days,count : INTEGER;

PROCEDURE innerloop(VAR count,days,gifts : INTEGER);
BEGIN
  WHILE count <> days DO BEGIN
    count := count+1;
    gifts := gifts+1;
  END;
END;

PROCEDURE outerloop(VAR count,days,gifts : INTEGER);
BEGIN;
  WHILE days < 13 DO BEGIN
    count := 0;
    innerloop(count,days,gifts);
    days := days+1;
  END;
END;

BEGIN
  CLS;
  gifts := 0;
  count := 0;
  days := 1;
  outerloop(count,days,gifts);
  writeln("  total no of gifts",gifts);
  readln(days);
END.
```

Pascal requires that we start with a program name, that is at the top, and although required is of little consequence.

Next we have declared the global variables. These variables, in this position, are available to every part of the program. In addition to these it is possible to declare in each procedure, local variables, which like variables in Extended BASIC user written sub-programs, can have different values to the "outer" global variables. All the numbers we are dealing with in this program are integers, so for greater speed ·· reduced memory usage we declare the variables as INT · (this is a good language for learning not to spell that word with an extra R!).

Declaring variables is necessary in Pascal, and many other languages. In BASIC it is taken care of with the Prescan, over which TI gave us so much more control in Extended BASIC. It sets aside a bit of memory to hold the values!

We then have the two loops, which I have here written as separate PROCEDURES. In Pascal, a procedure must appear in the code before it is called so we first have the innerloop, then the outerloop.

After the identifying word PROCEDURE and the name of the procedure, we list the variables that are being transferred to the procedure, and as we wish to pass them back to the calling routine, we add the word VAR at the start of the list. The type of the variable is also declared in this list. Not very different to an Extended BASIC CALL.

The innerloop should be fairly easy to compare to the BASIC program. We are incrementing both COUNT and DAYS, and then when count equals days, returning to the calling routine.

The outerloop is not that hard. Just that instead of testing for DAYS<=12, we jump out of the loop when DAYS=13, which is just another way of saying the same thing! You can see here how one procedure is using a previously defined procedure, as we use the procedure innerloop.

After the two PROCEDURES, follows the actual bit of program! I have added the input (readln) at the end so you can see the answer! It requires you to input a number before leaving the program and returning you to the title screen.

Once you have typed all this in using the Editor, press BACK (FCTN[9]) to return the cursor to the bottom of the screen, and do a test compile by entering CO (then press ENTER). If compilation is complete, you may save the code by entering SA DSK2.DAYS/P and then compile to disk with CO DSK2.DAYS/S.

You may of course use your own file names! I use /P to indicate Pascal source code, and /S to indicate 9900 Source code.

If you have an error, the program will place you in editor mode with the cursor near to the error point. It will actually appear at the point at which an error has become apparent, so a missing semicolon may result in the cursor appearing after the first word in the line below that which does not have that necessary punctuation. Check out the manual and your code! It is fairly straight forward.

In preparing this article I left off two semicolons and also miscounted my BEGIN/ENDs, which have to balance out.

You now have on disk your Pascal source code in DV80 format, and some 9900 source code, also in DV80 format. Now you have to assemble it! My TP99 disks had the assembler ready for use, so just choose the Editor Assembler option Assemble and with a source code file of DSK2.DAYS/S, and an object file of say DSK2.DAYS/O, off you go. I choose to use just the R specifier when assembling (habit!).

NOTE: When assembling, you must have your TP99 disk in drive one, as the source code (DAYS/S) has an include directive to copy in RUNLIBEQ from the TP99 disk!

Your assembled object code is now ready to run, but will NOT run on its own! You must use the Linker! Choose the Editor Assembler option 5. RUN PROGRAM FILE and input the name DSK1.LK99.

The "module name" to input once the linker is operational is DSK2.DAYS/O, that is, the object code file. As there is only one module, press enter next, then you are asked if you want a memory image file. Type Y, and input the file name. I chose DSK2.DAYS/MI.

Then when asked if you want to run the program, type yes!

NOTE: You must at this stage have in drive one your TP99 disk, as the Linker uses the file RUNLIB.

Once the memory image file has been prepared and the program run, your disk directory may look something like this:

```
DAYS/MI   3 Program       )Memory image produced with
DAYS/MJ   4 Program       )LK99
DAYS/O    6 Dis/Fix  80   =Object code from TI Assembler
DAYS/P    4 Dis/Var  80   =Pascal source from TP99 editor
DAYS/S    6 Dis/Var  80   =9900 source from TP99 compiler
```

Yes, two files for the memory image form!

The memory image files will run without having to use the Linker, but insist that RUNLIB is in DSK1, and also require the use of the Editor Assembler module (or at least its ROM!).

This series will not be monthly, but periodic. I welcome your queries and requests, and would love to see your code! If you would like me to reply to you direct, a couple of International Reply Coupons, or a couple of dollar notes would be most helpful.
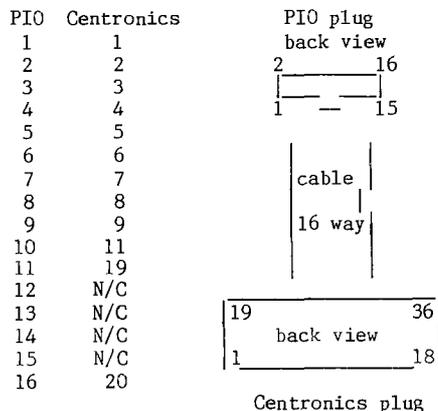
Turbo Pasc 99 is a major language for the TI99/4A. It will be a lot better when we have access to graphics and sound and really is very easy to use!

Best wishes, Stephen Shaw
10 Alstone Road, STOCKPORT, Cheshire, ENGLAND, SK4 5AH.

Handy Hints

by Ross Mudie

1. TI99/4A PIO to Centronics cable

```
PIO  Centronics        PIO plug
 1      1              back view
 2      2              2_____16
 3      3              |__    __|
 4      4              1   --    15
 5      5
 6      6
 7      7              |cable |
 8      8              |
 9      9              |16 way|
10     11              |      |
11     19              |      |
12     N/C
13     N/C             |19          36|
14     N/C             | back view    |
15     N/C             |1_____18|
16     20
                    Centronics plug
```

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

——————————————————————

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

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

——————————————————————

Modems

by D.N. Harris

Respected membership of TIsHUG; in regard to the use of a Modem, on the date of the 4th of March 1989, I was speaking to a member who had been in our little organization since its inception, yet could not do program transfer by the telephone. Evidently, one with the intuitive skills for that kind of thing, such as myself, is of a different kind of person from the more stolid, businesswise, conservative person more apt to succeed in business. An intuition regarding use and function is antithetical to the maintenance of order and system. The conjunction of persons of various heuristics is surely the benefit of any club, so that the valuable contributions both of order and of intuition can be combined!

Be that as it is, the fact of the matter is that one can let one's fingers do the thinking when it comes to sending a program down the line. Almost anything will work, or not work, as the case may be. I have one of the Modems made by Peter Schubert, which has the selection on its radio-like knob; 300 ANS, ORIG, VIATEL, and 1200. To send programs down the line it is essential to use different choices of knob setting from usual. Since my Modem will engage the BBS on ORIG to send stuff up the line I would need to switch to ANS, so probably the BBS is running on ANS. Electronically, no doubt all this comes to Sine Curves and Electronic Characteristics, as the jazz from the Computer is changed from 4MHz electronic warbles in Computerthink into a musical tone that goes up the telephone line in Telephonethink, which a Modem at the other end changes to Computerthink for the receiving system. If both systems were ORIG it would be like two people trying to talk at once. One has to be the listener, one the talker, or to put it nearer the mnemonics, one has to ORIGinate while the other has to ANSwer which is as near as I have figured it out to-date.

Having adjusted your Modems correspondingly, one of you is the ORIGinator, the caller up, while the other is the ANSwerer, the computer who says "Hello!" which is usually the TEXPAC, but does not have to be only the TEXPAC. Your knob will not break off if you switch it to ANS now and then! Having pre-arranged by a voice call to have a computer session at the same time as somebody else, both of you get the systems running, have a word on the telephone when ready, and get the Modems on dual connections with the voice telephones, but do not switch on the Modems immediately.

Let us suppose you have Music Maker, Personal Record Keeper, Personal Report Generator, Diet and Nutrition, Console Writer, or any other modules that allow choice of output devices. Tunes, files, summaries, diets, letters, and many more bits of information can be sent up the line. If you have made notes, files, calculations or summaries, of virtually any kind, these can be pre-recorded, then loaded in by the two of you connecting the appropriate Module to the computers, then the one on ANS enters the Modem device such as RS232/1 or RS232/2 as the output device and the one on ORIG enters the Modem device, RS232/1 or RS232/2 as the input device. Get ready to tell the systems to PRINT in the ANS system and to LOAD in the ORIG system. Start counting down over the telephones, 10, 9, 8, 7, 6, 5, 4.. At Zero you both switch on your Modems and hit the buttons for PRINT and LOAD depending on which parts you play. A count of Disk Sectors is apt to appear in the display for some packages.

You can send anything you have saved down the line this way, especially notes saved on Console Writer. It may be that what you want to send is a program that you have written and debugged and are proud of and want to show to somebody else. In this case the procedure is exactly the same as for getting things off TEXPAC so far as receiving the program is concerned but there is a difference in the case of the sender. You first load the electronic creation you wish to share into your system, then type the system command, SAVE RS232/2 or SAVE RS232/1 as the case may be. There is no reason not to choose a higher baud rate, so why not SAVE RS232/2.BA=9600? The person on ORIG does an OLD RS232/2 or perchance an OLD RS232/2.BA=9600, and the programs shoot through the wires as usual. Well, not quite! I have found it works better if one person has his Modem set on 1200 and the other on VIATEL.

The sending of the material at a 1200 baud rate gets it there a little more reliably than sending it at 300 baud. A bit of experiment may send some of you to a library to find out why this is so. I tend to believe in gremlins who may have sensitive ears and are put off by the higher pitched transmission tone of 1200 as distinct from the lower note of 300, which will mean something for the musically inclined. A less colourful way of looking at the problem is the signal to noise ratio theory. Interference in a telephone line at 1200 baud due to Soprano voices is less probable than voices at 300 which is more in the Tenor range. The Sender will use the 1200 and the Receiver the VIATEL tapping, knob label, call it what you like.

The other way you can use Modems is to send each other request items from notes by having the book or list handy for the purpose, using Terminal Emulator with a Speech Synthesizer so you can do a CTRL[1], and set up a tape recorder and as the selection menu for Terminal Emulator comes on the screen, choose half duplex for the transfer. You both switch over to Modems and type things up on the screens. You see each other's notes. Anything useful can be sent to the SPEECH output and recorded as notes on the cassette recorder, especially if you want to write it down somewhere. If you want printout the screen can be printed as usual, but for transcription it is very convenient to have the stuff on voice tape. It also saves paper. This way, all the data requested can be sent down the line and recorded in some way by the computer at the end. No more dry ball point ink problems! The computer takes the notes.

So one can see that databases can be applied to store a mass of pre-requested information, but probably the easiest way to list requests is to type from one computer to the other using the Modems on half duplex. This transfer is not very sensitive and you can opt to do it at ANS to ORIG settings, or 1200 to VIATEL settings. You can be dressed quite informally, yet handle a lot of business over the telephone this way, with the immediacy of speech combined with the precision of a written presentation, and it is surprising that members seem not to have realized the organizational potential! Surely there are direct sellers and inventive entrepreneurs and collectors with data to exchange.

The Modem is presently the cheapest way to go, all the mail you can type for the cost of a local call! There are members everywhere, and to send E-mail to a friend or relative not in the system, you can send it to a member in the near vicinity for downloading and printing, and have the mail there in the form of computer printout!

There are doubtless many other arrangements possible for the use of the Modem but I seem to be the first to get E-mail delivered to somebody not on the system! Most computer enthusiasts do not mind being a volunteer mailman, it adds value to the hobby, gains a little prestige, and a complete listing of the areas of members can be found in TEXPAC. To send them letters via TEXPAC you need to know their TEXPAC address. Mine happens to be ADVANCED. Perhaps this idea appeals to you and you want to send mail, well, your recipient would get thermal paper as I use HR-5 to print stuff from TEXPAC, and should include your telephone number for verification. What plots, schemes, and business mergers can we little hive of electronic busybees hatch?

continued from page 1

The Sydney meetings have impressed everyone to whom I have spoken this year. There is an enthusiasm which seems to be contagious at the meetings and everyone is joining in. There is plenty of communication both ways and even some volunteers to share the load. We must all thank Dick and Craig and try not to leave everything on their shoulders or they will surely buckle under.

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I had promised to tell you about the 80 column card this month but I ended up spending all my time on the Bug Report and as Rolf said "What arewe going to leave out?". Next month I will give you all the details and tell you how it helps with my productivity. I am planning to bring the system to the May meeting for all to see and to demonstrate the procedure I follow in editing the articles for the Newsletter. Sufficient to say that with the help of the 80 column Funnelweb version 4.13, the group has a system which is very powerful and easy to use and makes the Editing job much quicker.

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The March 1989 Northern NJ 99er's has a review of the Print Wizard by Blair MacLeod of Toronto, how to replace the PAL chip in a CorComp RS232/PIO board with logic and some other articles from other sources.

CIM99 from Montreal (Mars 1989), has a lot of information in French on Multiplan by Michel Johnson, a flight simulator Gazelle by Alain Beaulieu (also in English), TI-Base by Sylvain Paquette and about MDOS Autoexec file by Michel Johnson.

The Ottawa Newsletter of February 1989 has a construction article on 32K memory expansion using one 32K memory chip by David Caron; Beginners' assembly by Ralph Kuhn; Fast Extended BASIC by Lucie Dorais; some useful information from Steven Shaw on Printers both RS232 and PIO connections and the speech synthesizer.

ROM of February 1989 from the Orange County Users Group has articles by Earl Raguse on using the "2COLUMNS" program and his regular And So Forth #40 along with TI Bits #26 from Jim Swedlow which talks about Funnelweb 4.13 amongst other things; a table of CTRL[U] codes, how to generate them and what they are used for; a review of the Horizon P-GRAM card by Siles Bazerman and another Basically BASIC by N. Armstrong.

February 1989 Tacoma Informer has Impact/99 by Jack Sughrue with his usual informative column, this time about games of all sorts particularly Infocom ones; Desk Top Publishing by Jim Luque; Bill Gaskill's notes which include help on moving PRBase data to TI-Base.

TopIcs of February 1989 from LA99ers has an article about Sister Pat which is quite touching; Bill Gaskill's notes including compiling BASIC and quite a bit of trivia about the TI99/4A and a list of orphaned computers; Beginning Forth #9 by Earl Raguse on bit mapped graphics with text; Chick De Marti's Did you know that ? column; a TI-Base tutorial part 3 by Bill Gaskill.

TIUP Titbits, January 1989, from Perth has a number of interesting articles of a general nature and was interesting to read about a group trying to start up again.   o

Newsletter Update
by Lou Amadio
Local Newsletters

ATICC (Adelaide Users) February 89: Fred Cugley reports that work is continuing on the Kaleidawriter and EPROM Programmer and should have a unit to test within a month. The club will also be supplying RGB interface cables (analogue and TTL compatible) for $85 (I think this is for the cable without plugs; $135 for cable complete, ED). Colour monitors are available from Quebe ($190 for CGA and $250 for EGA). Also report of the loss of a large order of Geneves and software from Myarc. An article on how to set up a RAMdisk, hint on using a printer as a typewriter, reminder that the "TIMES Trophy" hardware/software competition is still on, hints on merging Multiplan files into TI-Writer, how to speed up Extended BASIC programs and a handy hexadecimal conversion chart.

Melbourne TIMES, February 89: Hard hitting editorial on lack of support from Myarc on orders placed in August 1987! GS reports on the success of overseas fairs with some good tips, request for "wait state" fix for fast 32K (how about it Geoff?), hint on using TI-Writer with a single floppy system (copy program files onto work disk), review of Jiffy Flyer (for signs, notices etc.), decision to run TI Faire in Melbourne (due to lack of interest elsewhere?), review of Hypercopy for Geneve, "Review Contest" for faireware and public domain programs ("Press" as software prize) and Multiplan tutorial by Peter Gleed.

TIUP TITBITS, November 88: BMX Trials Clockstop program, review and tips on PRBase, Extended BASIC program editor aid, archiving notes and RAMdisk construction notes.

Overseas Newsletters

SNUG (Sacramento 99ers) January/February 89: Miscellaneous club information, review of "Doom of Modular" adventure and continued tale of "Death of a Computer".

PUG Peripheral, March 1989: New version (3.0) of TI Artist, Artist tutorial (part 2), TI-Writer "Form" letters, Forth on Sprites and other graphics, trouble shooting disk drives, CS1 Find Index Extended BASIC Program, Multiplan tax program, loan repayments (Extended BASIC) and Jack Sughrue on the importance of solving puzzles as a form of development.

ROM (Orange County) August 1988: Worthwhile changes and a bug in DM1000 as used in Funnelweb V4.11, TI-Writer headers and footers, Assembly tutorial by Adrian Robinson on "windows inverse video" and finally a beginning Forth tutorial.

TopIcs (LA99ers), July 1988: Comments on using various TE programs, program Starter listing containing the following CALLS: Line, Scroll, Delay, Erase, Pause and Finish, Myarc MDOS Memory Manager (part 1), Extended BASIC modifications on speeding up the Auto Repeat, Program Checksum revisited, review of Certificate 99, Graphics files compatibility and some "C" routines by Stephen Shaw. August 1988: Fast loading modules into the 9640, Beginning Forth, review of Artist Enlarger and Jiffy Flyer (for printing notices), "Stirpline" genealogical lineage software, warning of possible explosion when changing MiniMemory batteries!, hint on converting pictures to TI Artist by using MAX/RLE and how to "list" to a printer with TI Logo II.

Tacoma Informer, September 88, March 89: Miscellaneous nostalgic ramblings from Jack Sughrue, new ROM for Star NX1000 when used with TI99/4A console, Beginning TI Artist part 1, and desk top publishing part 3.

TI Focus, (Hamilton), March 1989: Article on a RGB TTL (IBM CGA) monitor conversion to RGB analogue, review of TIBase V2.0, BASIC tutorial, Geneve Information column, Assembly debugging and tutorial on reverse characters.

Ottawa TI99/4A Users, March 89: Article on "Introduction to Copyright", assembly tutorial and programming as the "ultimate computer game", listing for Program Writer V2.0 which is handy for typing repetitive BASIC commands, installing RAMdisk inside console and a BASIC screen dump.

Spirit of 99 (Central Ohio), September 88: Using cassette systems #9, TI-Writer dot commands, how to create 2 joysticks from one, configuring tutorial on TIBase by Martin Smoley, review of Typewriter, using cassette files #14, tips on printer "width", hints on converting pictures into DV80 files and latest information on Zeno Board (see Techotime). March 89: TIBase tips and tutorial #2 by Martin Smoley, more on cassette files, review of HBM module.

TI-SIG (San Diego) January 89, February 89: Assembly article and review of Dijit AVPC 80 column card by Tony McGovern and "Disk Drives #5" by John Willforth.   o

Happy 8th Birthday

Regional Group Reports

Meeting summary.

Banana Coast	14/05/89	Sawtell
Carlingford	17/05/89	Carlingford
Central Coast	13/05/89	Toukley
Glebe	11/05/89	Glebe
Illawarra	21/05/89	Keiraville
Liverpool	12/05/89	Northmead
Northern Suburbs	25/05/89	Davidson
Sutherland	19/05/89	Jannali

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

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

CENTRAL COAST Regional Group.
Regular meetings are normally held on the second Saturday of each month, 6.30pm at the Toukley Tennis Club hall, Header St, Toukley. Contact Russell Welham (043)92 4000

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

ILLAWARRA Regional Group.
Regular meetings are normally on the third Monday of each month, except January, at 7.30pm, Keiraville Public School, Gipps Rd, Keiraville, opposite the Keiraville shopping centre. Contact Lou Amadio on (042)28 4906 for more information.

LIVERPOOL Regional Group
Regular meeting date is the Friday following the TIsHUG Sydney meeting at 7.30 pm. Contact Larry Saunders (02)644 7377 (home) or (02)759 8441 (work) for more information.
All demonstration programs are subject to Air Mail from USA. Some are still on the way
*** ALL WELCOME ***
May Meeting, 12th May. Demonstrations of Tod Editor, Legends II, PrEditor update, Press (perhaps) and Telco 3.0 (perhaps).
June Meeting, 9th June, Stephen Carr's home, 146 South Liverpool Road, Busby. Demonstrations of complete TI-Artist collection of Fonts, Instances, Borders, Enlarger and perhaps Press.
July Meeting, 7th July, Larry Saunder's home, 34 ColechinStreet, Yagoona West, (02)644 7377. Demonstrations of Font Writer II, Old Dark Caves, Oliver's Twist, Grand RAM card and Press in 80 columns.

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.
May meeting, 25th May. Demonstrations on using Disk Utilities. At Chris Develin's house, 17 Lowana Street, Belrose, phone 451 9982.
June meeting, 22nd June. Demonstrations of Funnelweb Configure and loaders. At Craig Sheehan's house, 21 Suzanne Road, Mona Vale, phone 997 1293.
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 at Jannali at 7.30pm. Group co-ordinator is Peter Young, (02) 528 8775. BBS Contact is Gary Wilson, user name VK2YGW on this BBS.
The March meeting was again well attended, with interest being shown in the Disk Utilities program, which provided us with some on the job training in disk hacking. Welcome to Alex McMillan who attended the Regional Group meeting for the first time.
A failed RAMdisk and DSK1, in the week prior to the meeting cast some doubt as to whether the equipment would be operational on the day. Thanks to Garry and Derek for their invaluable assistance.
Future meetings will take a closer look at the workings of TI-Artist, especially following the acquisition of a new graphics printer by myself.
Favourable comment has been passed regarding the revised format for the main monthly meeting at Woodstock. Keep up the good work Dick and Craig. Peter Young

TIsHUG in Sydney
Monthly meetings start promptly at 1.30pm on the first Saturday of the month that is not part of a long weekend. They are held at the Woodstock Community Centre, Church street, Burwood. Regular items include news from the directors, the publications library, the shop, and demonstrations of monthly software. Meetings for the next couple of months are:

May 6 - TIsHUG's technical co-ordinator, Lou Amadio, will exhibit some of the technical projects shown in the TND over the past twelve months. These will include a modified console with 64K on the 16 bit bus, the Super Module and a stepdown transformer for the PE box. Being the club's 8th birthday, a demonstration of TI99/4A hardware, past and present will be given. If you wish to contribute to this display, please ring Craig Sheehan on (02)997 1293 on weekdays after 8pm.

June 3 - Fullday workshop: TIsHUG's first workshop for 1989 will start at 10:00am at Woodstock Community, Burwood. Planned topics include: Hands on beginners' Extended BASIC, Intermediate Extended BASIC programming, programming 'c99' for beginners, using the TIsHUG / AT clock, a program clinic, copython of the club software library, console repairs and hardware advice. More details will be published in the June TND.

Future meetings are on July 1 and August 5.

Craig Sheehan (Meeting co-ordinator).   o

Happy 8th Birthday

I suspect some of you will want personal lessons! I could accept tuition fees for Modem strategy, which does not include hacking bank systems and writing big accounts! For the running of inter-member businesses the Modem can be a big saver of mail, and save a lot of chatter on the telephone as 12k of notes which is 50 files of 15 characters by Personal Record Keeper or a page and a half of foolscap on Console Writer can be sent down the line as one file, and library projects or other research can be made up as files or notes and swapped by the telephone. There is no limit but your own imagination, which tends to stretch as you apply it!   o