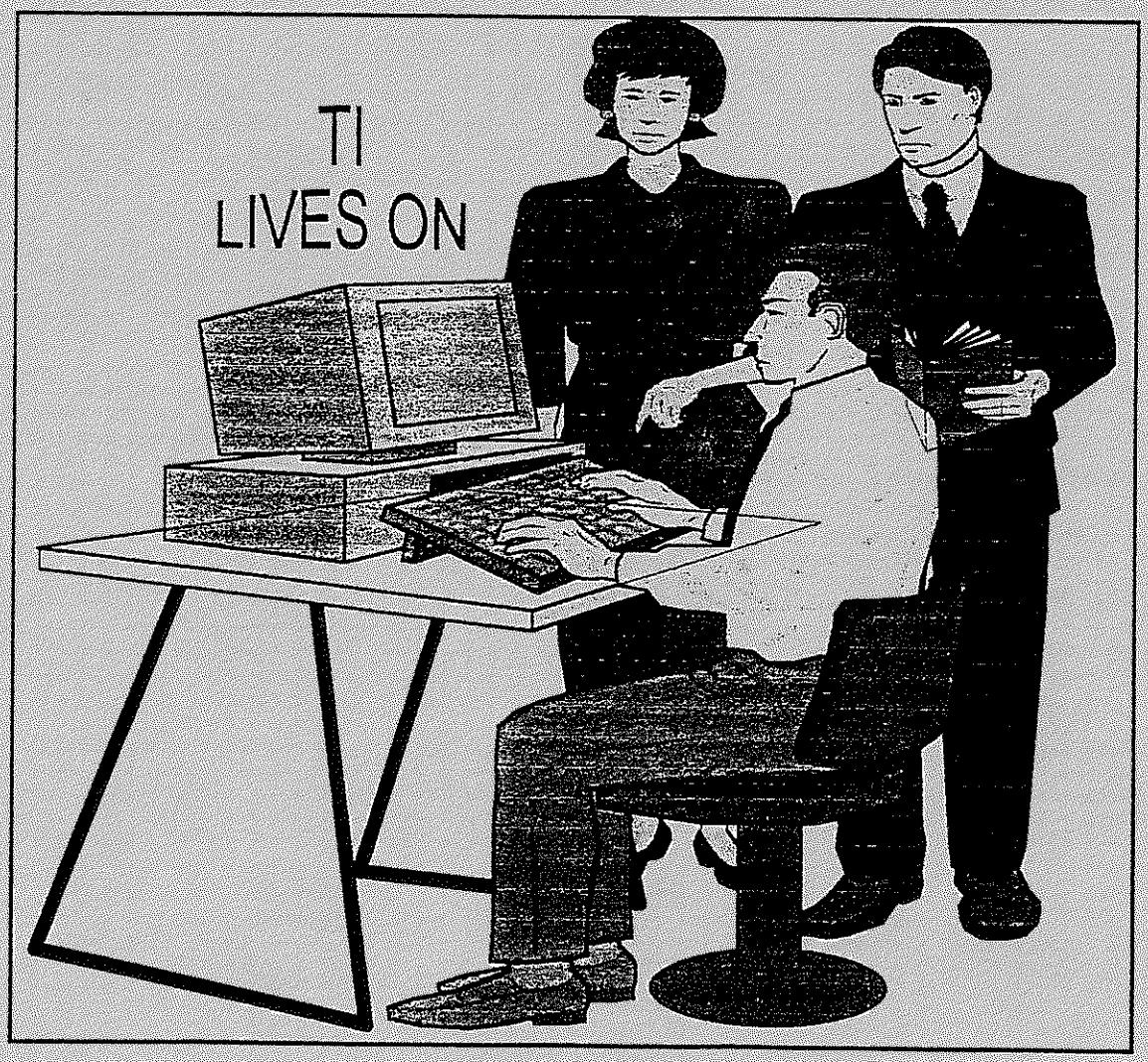
HUG NEWS DIGEST

Focusing on the TI99/4A Home Computer

Volume 15, Number 4 May, 1996

PRINT POST Approved - PP244099/00016



Sydney, New South Wales, Australia $3

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

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

TIsHUG News Digest ISSN 0819-1984

INDEX

Title	Description	Author	Page No
ARTIST CARDSHOP TIP	GENERAL INTEREST	RON WARFIELD	12
CALENDAR PROGRAMS	GENERAL INTEREST	ADRIAN ROBINSON	9
CASSETTE CARE	GENERAL INTEREST	STEPHEN SHAW	3
EDITOR'S COMMENT	GENERAL INTEREST	LOREN WEST	15
HOW TO TRANSFER PROGRAMS	TIPS	UNKNOWN	2
MAGAZINE CONTENTS	REMINDER	LOREN WEST	14
MODEMS EXPLAINED	TECHNICAL	GARY COX	4
PAGE PRO TIPS	TIPS	MICKEY CENDROWSKI	7
PUZZLE	PUZZLE	LOREN WEST	7
REGIONAL REPORTS	GENERAL INTEREST	VARIOUS	23
RIGHT JUSTIFIED	TIPS	OSHTI	15
TISHUG SOFTWARE	GENERAL INTEREST	LARRY SAUNDERS	8
TISHUG SOFTWARE REVIEW	REVIEW	LARRY SAUNDERS	8, 12
TREASURER'S REPORT	REPORT	CYRIL BOHLSEN	3
YOU WILL NEVER BE SORRY	TIP	JUDY WAGNER	12

IBM

CD ROM INFORMATION	GENERAL INTEREST	UNKNOWN	16
IBM SHOP	GENERAL INTEREST	CYRIL BOHLSEN	18
IMAGE SCANNERS	GENERAL INTEREST	CYRIL BOHLSEN	19

The Board

Co-ordinator
Dick Warburton (02) 9918 6132

Secretary
Percy Harrison (02) 808 3181

Treasurer
Cyril Bohlsen (02) 639 5847

Directors
Thomas Marshall (02) 671 7535
Loren West (047) 21 3739

Sub-committees

News Digest Editor
Loren West (047) 21 3739

BBS Sysop
Ross Mudie (02) 456 2122
BBS telephone number (02) 456 4606

TI Merchandising
Dick Warburton (02) 918 6132

IBM Merchandising
Cyril Bohlsen (02) 639 5847

Software Library
Larry Saunders (02) 644 7377

Technical Co-ordinator
Geoff Trott (042) 29 6629

Regional Group Contacts

Central Coast
Russell Welham (043) 92 4000

Glebe
Mike Slattery (02) 692 8162

Hunter Valley
Geoff Phillips (049) 42 8617

Illawarra
Geoff Trott (042) 29 6629

Liverpool
Larry Saunders (02) 644 7377

Sutherland
Peter Young (02) 528 8775

Membership and Subscriptions

Annual Family Dues	$35.00
Associate membership	$10.00
Overseas Airmail Dues	A$65.00
Overseas Surface Dues	A$50.00

TIsHUG Sydney Meeting

The May Meeting will start at 2.0 pm on the 4th May 1996 at Meadowbank Primary School, Thistle Street, Meadowbank.

Printed by
Kwik Kopy West Ryde

HOW TO TRANSFER PROGRAMS

BETWEEN CASSETTE AND DISKETTE?

Normaly OLD DSK1.PROGRAM; SAVE CS1 will work. But what when the file is too large and even CALL FILES(1) won't help?
After loading an INT/VAR 254 from disk you can type in: CALL LOAD(-31888,63,255). This will act like CALL FILES(0) and sometimes the program can be saved. If not, it's realy too big too fit on cassette. But how can you get a file from cassette on your disk thatwon't load because it's too big.
Simply by using the DSKBUF program. How? Type in:
RUN "DSKx.DSKBUF/EXB" (only ones)
CALL LINK("SAVE") (this will save the disk buffer)
OLD CS1 (the program has to load now)
CALL LINK("LOAD") (this will restore the disk buffer)
SAVE DSKx.PROGRAM (or any name you like)

Eric-Paul Rebel
Mereistraat 27
1223 NR HILVERSUM
The Netherlands

```
     DEF  SAVE
     DEF  LOAD
VMBW  EQU  >2024
VMBR  EQU  >202C
SAVE  MOV  VDPTOP,R0
         VDPTOP,R0
         VDPTOP,R0
      MOV  R0,SAVTOP
           SAVTOP
           SAVTOP
           SAVTOP

      LI   R1,DSKBUF

      LI   R2,>4000

      S    R0,R2

      BLWP VMBR
         VMBR
         VMBR
         VMBR

      LI   R0,>3FFF

      MOV  R0,VDPTOP
           VDPTOP
           VDPTOP
           VDPTOP

      RT

LOAD  MOV  SAVTOP,R0
           SAVTOP,R0
           SAVTOP,R0
           SAVTOP,R0

      MOV  R0,VDPTOP
           VDPTOP
           VDPTOP
           VDPTOP

      LI   R1,DSKBUF

      LI   R2,>4000

      S    R0,R2

      BLWP VMBW
         VMBW
         VMBW
         VMBW

      RT

SAVTOP BSS  2

DSKBUF END
```

END OF ARTICLE

FOR SALE

MODEMS

Peter Schubert has some *SCITEC* Business modems for sale, they are Hayes compatible - baud rate = 2400, external type.
$60:00 or offer.

Ring Pete on 02 6115335

CASSETTE CARE.

from Stephen Shaw, England

The Manchester Central Library have published an excellent leaflet on care of cassettes and cassette players, which is highly relevant to Cassette Users. I have extracted the juicy bits for you...MUSTS:

1. CLEAN your recorder regularly- if you use a "wet cassette" you must still clean separately the capstan and pinchwheel, as these special cleaning cassettes only clean the heads properly. See notes later!
2. Keep cassettes in cases, away from heat and magnetic fields and damp.
3. Before putting a cassette in the machine, rotate a spool with your finger to make the tape fully taut.
4. Never use C120's and for best results stick to C60s or shorter. C120s are very likely to stretch and snap, and even C90s may come apart quite quickly. The thinner tapes are more likely to snarl up your machines.
5. Cassettes are not hammers. Observe care.

Detail:

A cassette tape is a VERY thin thing, coated with an even thinner oxide coating, and even under the best conditions. the best tape will shed its coating little by little... onto the surfaces of your recorder, where they stick and begin to scratch your tapes and even more coating comes off.... The PINCHWHEEL is the larger rubber-like wheel which rotates pulling the tape onto the take up spool, while the CAPSTAN is the thin metal wheel which presses the tape against the pinchwheel. If you don't clean these properly, tape is liable to snarl up in your player. The only way to clean them is with COTTON BUDS, dipped in special head cleaning fluid or metho. Some alcohol's may be suitable but NOT isopropyl alcohol, widely used for cleaning disk drives!, as isopropyl alcohol can cause uneven swelling in the pinchwheels. Clean the heads to avoid undue wear, and losses of audio quality (dullness) which may stop the player being computer compatible.

CLEAN EVERY 10 HOURS PLAYING TIME.

If you use a head cleaning tape, discard it after ten uses, after that it just spreads dirt around over them, the heads gradually build up a magnetic charge from the tape. This could produce increased background hiss, and might eventually result in tapes becoming partly (and irrevocably!) erased while being played. Demagnetize your heads AT LEAST once a year. Special cassette-shaped devices can be bought and are safest to use.

With thanks to Manchester City Council Cultural Services.

END OF ARTICLE

TREASURER'S REPORT

by Cyril Bohlsen

Income for April	$ 1684.00
Expenditure for April	$ 408.49
Profit for April	$ 1275.51
Membership accounted for	$ 525.00 of income
Shop sales	$ 1159.00 of income

The expenditure was made up of the following :-

Australian Securities Commission	$ 32.00
Printing and posting of TND	$ 195.59
Shop purchases	$ 96.00
BBS running costs	$ 48.55
Admistration costs	$ 36.35

END OF ARTICLE

DID YOU KNOW?

Some folks don't exaggerate - they just remember **big**.

MODEM'S EXPLAINED

By Gary W Cox

This article was originally written for IBM compatibles and modified with comments to accommodate a relationship with the TI99/4a and Geneve 9640.

Basically three physical types of modems exist for PC systems. an internal modem, an external modem and PCMCIA modems. For the TI99/4a or Geneve 9640 an external modem must be purchased. Along with the modem you will need a standard 25 pin to 25 pin cable as well, as an adapter to crossover pins 2 and 3. In other words pin 2 on one end of the cable must go to pin 3 on the other end and pin 3 on one end must go to pin 2 on the other side. An adapter (sometimes referred to as a reverser) must be purchased for a standard PC cable to make it work or a special cable with pins 2 and 3 switched must be made.

INTERNAL MODEMS

An internal modem is used inside of the computer and connects directly to the I/O BUS. The internal modem does not require a separate power supply as it gets it's power from the computer's internal BUS nor does an internal modem require a serial port or connecting cables to that port. An internal modem will contain a 16550A UART or equivalent circuitry which will aid in fast data throughput to the computer. Internal modems are usually cheaper than external modems as well. Internal modems are a little more difficult to install than external modems and an available ISA slot must be present to install it into the computer.

EXTERNAL MODEMS

On an external modem it is necessary that the modem be connected to a 16550A UART serial port to be assured of the maximum data throughput and of course, an available serial ports necessary.

Basically to determine if a serial port has a 16550A UART diagnostic program such as MSD but be executed. MSD is a program which comes with windows 3. 1 and it is located in the Windows subdirectory. When running MSD be sure to EXIT Windows to run MSD and DO NOT run MSD from a DOS shell as MSD must be run outside of Windows in order to provide accurate results. After running MSD select information on COMM ports and the display will indicate if a 16550A UART is present. Some systems may show a 16550 (no A) which is an older version of the 16550 that will probably work ok but not as well as a 16550A. Basically this 16550A UART contains features .which will allow the serial port to operate at higher speeds without errors or buffer overuns. A good majority of new systems today contain this 16550A UART in their serial ports. Therefore an external modem connects to a serial port on the PC and requires the use of a connecting cable between the PC and modem. a power connection and of course a place to put the modem itself. The advantage of an external modem is that external modems can be easily moved from one computer to another and the lights on the modem itself can aid in the diagnosis: of any problems. Furthermore, an external modem can easily be reset by turning it off whereas an internal modem can not just be turned off without turning off the system.. . Note that the T199/4a and Geneve 9640 do not have 16550 type serial ports and thus they may not be able to operate at the maximum speeds of today's modems. The TI99/4a using Telco can only operate at a maximum of 24OObd as Telco can not keep up with the data coming into the serial port while other terminal programs may operate faster as well as the Geneve 9640 may run faster. In other words, I haven't tested the speeds with various programs, in this article I am simply Just discussing today's modems.

PCMCIA MODEMS

Another type of modem is PCMCIA modems which are build specifically for the PCMCIA slot in a laptop. For laptops an internal modem (PCMCIA) is almost a necessity to prevent having to carry an external modem around with your laptop. PCMCIA modems are not compatible with the TI99/4a and Geneve 9640 systems .

STANDARDS

A variety of standards in modems exist, these standards dictate the speed at which the modem will operate as well as allow for two modems using the same standard to communicate....

These standard were developed in the beginning by Bell Labs and later developed by CCITT which stands for Consultative committee on international Telephone and Telegraph.

HAYES COMPATIBLE - The term "Hayes Compatible " , often seen in technical literature. does not refer to a communications protocol but rather the commands required to operate a modem. Nearly all modems conform to the "Hayes Compatibility" (sometimes known as the "AT" command set) standard.

BELL 103 - This is the standard developed by Bell Labs for 300 bps.

BELL 212A - This is the standard developed by Bell Labs for 1200 bps.

V. 21 - This is an international standard for 300 bps but is used internationally and is not compatible with the Bell 103 standard. This standard was used mostly outside of the U.S.A.

V.22 - This is also an international standard for 1200 band but is not compatible with the Bell 212A standard. This standard was used mostly outside of the U.S.A.

V. 22B1S - This is the standard for 2400 bps communications which is actually an improvement over the v.22 standard. By the way BIS is Latin for second. indicating that this in an , improvement to or follows a previous standard.

V. 32 - This is the standard for 9600 bps transmission.

V.32BIS - This is the standard for 14,400 bps.

HST - This is a proprietary standard developed by US Robotics for 14.4OObps transmission. However. you must have another HST modem in order to communicate at the 14.400 bps speed unless you have a us Robotics Dual standard which communicates with HST and V.32BIS modems. Also some of the US Robotics HST modems will operate at 16.800 bps while some dual standard US Robotics HST modems can operate at 19.200 bps..

V.34 - This is the standard for 28.800 bps transmission speed.

V.FC - This is an alternate standard for 28.800 bps transmission developed by Rockwell but the V.34 protocol took over instead. If your 28.800 bps modem supports V.FC that's good but it needs to also support V.34 to be compatible with the most modems running at 28.800 bps. Note that the US Robotics 28.8 modem supports both V.34 and V.FC.

Also a few other proprietary protocols exist but are no longer being used today so I see no need to mention them.. . Note that all high speed modems incorporate the standards for 300. 1200 and 2400 bps operation.

Built into all high speed modem are also protocols which have to do with error correction. What this means is that the modem itself can detect a transmission error and request a retransmission of that corrupted data. For the data correction to work both modems must use the same error correction standard. A variety of these standards are listed below:

Note - MNP stands for Microcom Networking Protocol. MNP Class 1 - This provides for about 70 percent efficiency in error correction and is rarely used anymore.

MNP Class 2 - Due to protocol overhead this protocol for error correction can actually slow down the transmission speed of data and for that reason it is rarely used.

MNP Class 3 - This protocol for error correction incorporates Class 2 protocols but is much more efficient and can even yield a slight increase in data throughput than a connection without MNP class 3 protocol.

MNP Class 4 - This protocol provides not only error correction but improves throughput and performance by about 5 percent. However. depending on the type of connection an increase in throughput can be as high at 25 to 50 percent. . .

MNP Class 5 - This protocol is a data compression protocol that can increase throughput of the modem up to 50 percent depending on the type of data being sent. Raw text files that are not compressed yield the best compression whereas files already compressed yield less throughput since they are already compressed..

V.42 - This is also an error correction protocol with fallback to MNP 4 thus a modem that understands MNP 4 can link with a modem using V.42 protocol. . . This standard uses a protocol called LAPM (Link Access Procedure for Modems) and thus will retransmit corrupted data during transmissions. V.42 is considered to be better than MNP 4 because it provides about 20 percent higher transfer rate due to more intelligent algorithms.

V.42bis - This standard is a data compression standard providing about a 35 percent increase over MNP Class 5's data compression methods. One of the best features of V.42bis is that it analyzes the data first and then determines whether already compressed the V.42bis protocol determines that compression would not be useful and in fact if already compressed files were attempted to be compressed again it could actually slow down the transmission process. The MNP Class 5 standard always compresses the data thus MNP Class 5 can actually slow down a transmission whereas V.42bis decides if it would be useful to compress the data! A modem using v.42bis must also incorporate v.42 error correction thus with v.42bis and v.42 protocols combined the modem operates with an error free connection that has the maximum data compression possible.

So a 14.4 modem with error correction and compression can actually provide for data throughput up to 57.600 bps and a 28.8 modem with error correction and compression can provide for data throughput up to I15.200 bps!

Therefore. when setting the speed of your communications software a speed higher than what the modem is rated for should be selected as with data compression the modem can send and receive data faster than what the modem is rated at thus this is what is called the actual data throughput. For example. for a 1 MEG text file the modem may be able to compress it down to 60 percent of it's original size. Thus with the file being 50 percent smaller it takes half the time to transmit file over the phone. The modem on the other end uncompresses the data back to the original 1 MEG file size. Thus the data throughput is much larger than the modems rated bps rate due to the data compression. Therefore, since the modem is compressing the data before

sending it the modem can take data faster from your computer as if it were sending it at the faster rate. So give your modem as much data as it can take by putting your COMM port up to a higher speed.

Remember also that the computer's serial port must be able to handle the baud rate that you select. A 16550A UART in your serial port can support a serial rate of 115.2k or 57.6k bps. a 16450 UART is about 38.4k bps and an 8250 UART supports a maximum or about 19.2k bps.

As for as FAX compatibility's a variety of standards exist and most modems today carry the ability to send and receive faxes. Originally Group I and II fax protocols were the only two which where slow and thus are rarely used today. The FAX standard in use mostly today is group III although a group IV exists but that's used with ISDN.

Within the Group III fax protocol is two subdivisions Class 1 and Class 2. Basically the Class 1 and Class 2 standards specify command sets available for modems and the software packages that use them. class 2 supports about 30 commands whereas Class 1 supports less than 10 commands. The main difference, however. between Class 1 and Class 2 is that class 1 requires the PC to handle some of the protocols where as Class 2 most of the protocol operations are performed in the modem. Many modems support Group III class 1 and 2 which covers just about everything!

However. remember to send a FAX a document the document must be already present in the computer either by it originating there (you type it in or load it) or it must be scanned in by a scanner. Received faxes can be printed VIA the computer's printer. Note that FAX software is usually included with the modem.

Currently no FAX software exists for the TI99/4a or Geneve 9640 to take advantage of the fax portion of today's modems.

If you are all confused about all these protocols don't be, your modem figures all this out by itself when it links with another modem. By they way if you are curious as to what type of connection that you modem has made, whenever your modem connects it sends back a connection string to your terminal program. Unless this information is altered out by your terminal program it will be displayed on your screen indicating the baud rate, error correction and compression standard being used on the current connection.

TIP

When purchasing a new modem I recommend either a V. 32BI5 (14.4OObps) or V.34 (28.8OObps) modem as with today's data transfer needs a high speed modem has become necessity. Some Internet providers do not allow access for modems with a speed under 14.400 bps. On the other hand. not all services are running at 28.800 bps but everyone is quickly going that way. However, be sure your TI or Geneve will operate at the speed that you are wanting to use it. For me I have a manual switch box which switches my modem between both my PC and TI so either system can use it.

UPGRADABILITY AND COMPATIBILITY

In purchasing a modem it should be noted that you get what you pay for. The V.34 standard used for 28.8 modems is somewhat like a tool box with a variety of tools. Manufacturers can pick and choose what tools that they want to implement out of that tool box. Therefore. cheaper modems generally implement fewer options which may effect flexibility, throughput and the ability to just to connect with other modems. Also many modem manufacturers place their modem control software (firmware) in a ROM chip on board the modem itself. As the V.34 standard changes to correct some bugs and to reflect enhancements it is nice to be able to upgrade the modem's firmware to reflect these changes . Many modem manufactures will have this ROM socketed so that it can be removed and replaced while other manufacturers allow for FLASH ROM where the ROM can be updated by software which reprogramms it. Sometimes the firmware is separated into two chips one the "control" firmware and the other the "datapump" code. The "datapump" code handles the protocols such as the V.34 whereas the control software handles the control and features of the modem. Often this datapump ROM chip is soldered into the modems motherboard and thus can not be updated except at the factory. Some manufacturers. such as US Robotics place the control and datapump code into the same ROM so both can be Courier have both the control code and datapump code in Flash ROM and thus can be updated VIA a software update. If you) purchase a cheap modem it may have less features and future Pt chase a cheap modem it may have less features and future updates may not be available. Just remember you usually get what you pay for.

Do 28.8 modems actually connect at that data rate? The answer to that is not always. 28.8 modems use nearly the full bandwidth of today's analog phone systems and any noise on a line will reduce the modem's ability to transmit at the maximum rate thus the modem reduces it's transmission speed to accommodate the quality of the phone line. The fastest that my 28.8 modem usually connects is at 26.400 bps due most probably to my phone line connection. Some high end modems such as USR Courier and AT&T have come out with an extension of the V.34 standard which will support speeds up to 33.6 kbps but most people will not be able to achieve those speeds do to phone line conditions. US Robotics refers to this 33.6 standard as V.34+ .Since these speeds have reached the

absolute limit of our analog phone system the next increase in speed will be obtained by ISDN connections which are digital phone lines instead of analog. An analog signal might be thought of as what might be seen on "sin wave" pattern in the form of a bunch of waves as it would be seen on an oscilloscope. Digital signals are simply 1's and O's. What a modem is actually doing is converting the computer's digital signal into an analog signal (modulation). The analog signal is then transmitted over an analog phone line where a modem on the other end converts that analog signal into a digital signal (demodulation) once again. This process of MOdulating and DEModulating is where the term MODEM comes from.

BUYING A MODEM

When purchasing a high speed modem be sure to purchase a good guilty well known brand. Remember . you get what you pay for . if you buy a modem just on price you may have problems . The cheaper adobes are sometimes cheaper because they may incorporate fewer options which may limit the data throughput or flexibility or the Modem. For example. some low end modems do not support split transmit/receive speeds. Furthermore. the quality of the components in a low end modem and it's design may cause connection problems. This is not to say that the higher end modems do not have problems but the low end modems seem to have much more problems. . . Some of the modems that I have found to be good based on my experience are US Robotics (especially the Courier series). Hayes and Practical Peripherals.

A FINAL WORD

Just when you thought this article was over now comes yet another type modem that allows the transmission of both voice and data over the same phone line! The standard used called DSVD (Digital Simultaneous Voice and Data) was a jointly developed standard from US Robotics, Intel and Rockwell Network Systems as well as a few other companies. .. DSVD modems have two phone jacks (RJ11) which one is for the modem and one for the phone as is Usual and two I/O jacks for a microphone and speaker. Thus two people with a DSVD modem can transfer data while talking to each other on the same phone line! This can certainly come in handy when you are wanting to talk and transfer files at the same time as the modem incorporates the voice in with the data transmission. . . One such modem in production is the US Robotics Sporster Vl 28.8 with DSVD and sells for about a $100 more than a standard Sportster 28.8 modem.

I can't finish without a short word about ISDN (digital data line) is the next step up in transmission speed transmitting at 64k bps. The drawback of ISDN is you must have an ISDN phone line and a bit surfer to connect between the phone line and your computer. Even with ISDN a modem will still be necessary to connect with the millions of people out there who have analog modems as ISDN can only connect with a system which has ISDN. Since 64k bps is faster than what the TI99/4a or Geneve 9640 can currently handle ISDN is not currently' functional for the TI99/4a or Geneve 9640.

I hope that this article at least gives you some ideas about modems even though not all of this article pertains to the TI99/4a or Geneve 9640.

END OF ARTICLE

PUZZLE

This months list of words is based around the subject of "Computer Programmer"

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

APL	Debug	Memory
Ada	Disk	Merge
Assembler	Field	Modem
Basic	File	OOP
Binary	Forth	Object Oriented
C Plus Plus	Fortran	Pascal
Cobol	Functions	Print
Code	Hardware	Program
Compiler	Keyboard	Software
Computer	Linker	Sort
Data	Lisp	Subroutine
Data Base		

Find these hidden words

HOW TO PLAY

In this puzzle there are 34 words somewhere horizontal, vertically, diagonally and even backwards

TiSHUG Software File
MAY 1996
By Larry Saunders

Diskname U168
Used= 346 Free= 12

FX Sound Files refer review March 1996

BULWINK2	88 D128	LEFTTURN	77 D128
NAMESFOR	21 D128	THATSALL	71 D128
TOADS	47 D128	YASTUPID	42 D128

Diskname P169
Used= 336 Free= 22

Page Pro Pictures converted from MAX/RLE

HORSEF	28 I 13	HOWARD	28 I 13
ISPYR	28 I 13	P-BOX	28 I 13
PENGUIN	28 I 13	PIRATE	28 I 13
SCROOG	28 I 13	SNOOPY	28 I 13
SPOCK	28 I 13	SRIDE	28 I 13
THE-WALL	28 I 13	TIGER	28 I 13

Diskname P170
Used= 336 Free= 22

Page Pro Pictures converted from MAX/RLE

ABBOTT+C	28 I 13	BUGSBUN	28 I 13
CORVET	28 I 13	DINO1	28 I 13
DOG1	28 I 13	DOG2	28 I 13
FERRI	28 I 13	GATOR	28 I 13
GIRLB	28 I 13	HOWDY	28 I 13

Diskname U171
Used= 204 Free= 154

Calculator program refer review.

CALC/DOCS	50 d 80	CALCULATOR	61 i254
COMMENTED	90 i254	LOAD	3 Prog

END OF ARTICLE

TiSHUG Software File Review
May 1996
Editored By Larry Saunders

I hope you enjoy this disk collection. Since it was submitted to Micropendium for inclusion in their FAIRWARE section, there have been some additional programs added.

Reverserle- creates an inverse (negative image) of any Fixed 128 RLE picture.
IMPORTANT:
The input file must be an RLE picture in df/128, no other type will be accepted by the program. If the picture is in another format such as Graphx or TI-Artist, first using the Max-rle program convert it to 128 format using the SAVE(S) command (paged with space bar). Read the doc's for Max-Rle for a complete description. The output filename of Reverserle may not be the same as the input filename, UNLESS it's sent to a different drive. (the program will issue an error if you attempt to call both input and output files the same name)
I have also included a copy of MAX-RLE, for those who don't have a copy.

Besides the graphic screens, which are in RLE and GRAPHX , there is an additional program included called SHOWGX. SHOWGX loads the assembly program READG, this program unlike REVERSERLE is to run in BASIC with the E/A cartridge.

SHOWGX- Will scan any drive selected and look for GRAPHX pictures. When found it displays the name and loads it.
Press any key for it to go on to the next. When all pictures on that disk are loaded it asks for more?. If you respond yes, you can now load another disk from any drive .
DO NOT ATTEMPT to alter the basic loading program.
If you have any questions please feel free to write me:

Stephen J.Tuorto
18-Chimney Lane
Bayshore,NY 11706

Calendar Programs, and no Assembly

by Adrian Robinson, ROM, USA.

This article has been in the back of my mind for several years. Calendars are a fairly frequent subject of programmers' efforts and, when new calendar programs appear, I often feel an urge to comment on them. Occasionally, a program may be founded on an incorrect algorithm, which results in inaccuracy of in a limited range of application. More often though the algorithm is correct, but extremely inefficient programming techniques are employed, which result in a program much longer than it needs to be. A calendar program can really be quite simple and I will discuss some simple techniques, but first I would like to say a little about the foundations for, and history of, the calendar. The history of development of the calendar is an interesting subject in itself.

A calendar is basically just an enumeration of the days in a year or of the number of rotations of the Earth about its axis during one revolution of the Earth around the Sun. Oddly enough there are at least three different definitions of the length of a year. They are the Sidereal Year, the Anomalistic Year and the Tropical Year. We will not discuss the first two of these but the Tropical Year is the year of the Seasons and thus the basis of the calendar. The Tropical Year is the time between two successive occurrences of the Vernal Equinox, the time when the Sun's apparent motion crosses the Earth's equatorial plane in its northward movement and marks the beginning of Spring. The length of the Tropical Year is approximately 365.2422 Mean Solar Days. We will refer to this value later.

As civilizations developed in various parts of the world, some of the earliest recorded information includes astronomical observations and the development of a calendar in one form or another. An observer may notice that the position of sunrise or sunset on the horizon varies, moving north an south, during the year and he may relate that cycle to the seasons. Then, by counting the days in the cycle he can forecast the seasons. A hunter-gatherer society can now decide its migration cycle or an agricultural society can decide when to plant and when to harvest its crops. Thus, even a crude calendar can be a powerful tool.

The roots of our calendar go back more than 7000 years. The ancient Egyptians first determined the length of the year as 360 days and then, centuries later as 365 days. With this value, in the year 4236 BC, they devised a calendar of twelve thirty day months supplemented by five consecutive year end holidays. Not a bad idea!! in fact, I think that I would prefer this to our current calendar with its months of oddly varying lengths. Much later, they realized that the year was more nearly 365.25 days in length and in 238 BC they provided for a leap year every forth year. This calendar, however, was not widely accepted.

Meanwhile the Romans were struggling still with a lunar calendar of twelve alternating 29 and 30 day months. (The cycle of lunar phases is 29.5 days). But twelve lunar months total only 354 days so they found it necessary to throw in an extra month about every two or three years to keep the seasons more or less in order.

Finally, in 46 BC Julius Caesar set about reforming the calendar. He made the calendar independent of the phases of the moon and changed the lengths of the months to total 365 days. He also adopted the Egyptians' 365.25 day year. In addition, he restored the time of the Vernal Equinox to its ancient date of March 25. Naturally this became the Julian Calendar. Aside from some inconsequential "political" adjustments the only significant change in the next sixteen centuries was the introduction early in the forth century AD of the Christian seven day week. This added a further complication to the calendar since the year is not divisible by seven.

Now the Julian calendar of 365.25 days differs from the actual length of the Tropical Year of 365.2422 days by about one day in every 128 years. As a result by the sixteenth century, the calendar date of the Vernal Equinox had advanced from March 25 to March 11. If this were to continue long enough we would have Spring in December and Winter in August (USA).

In 1582, therefore Pope Gregory XIII proceeded to correct the errors of the Julian calendar. You may have wondered why Pope Gregory would be concerned with the calendar. Well, the date of Easter was prescribed in AD 325 to be the First Sunday on or following the day of the first full moon following the Vernal Equinox. Hence he wanted to maintain a constant date of the Vernal Equinox. He therefore ordained that century years would not be counted as leap years unless they were also divisible by 400. This has the effect of making the average length of the calendar year -:

$$(365+.25)-(1/100)+(1/400) = 365.2425$$

which is a much better approximation to the true length of a year. He also made March 21 the date of the Vernal Equinox, as it was in AD 325 instead of the original March 25. Thus in 1582, in order to correct the calendar October 5 suddenly became October 15!

I think that it is worth noting that two contemporaries of Pope Gregory were Copernicus and Galileo, both of whom were persecuted by the Church for their "heretical beliefs" that the earth revolved around the sun and was not the center of the universe.

The world's acceptance of the Gregorian calendar has been slow. It took Great Britain and her Empire two centuries to accept the Gregorian calendar (1752). It seems that the venerable old Church of England had been very influential and it was not anxious to accept a calendar that was ordained by the Pope of Rome. However it is generally accepted today, at least in the western world. Although the Gregorian calendar has a residual error of one day in about 3300 years, it is a good enough approximation for many more centuries of practical use.

From time to time proposals are made for reform of the internal structure of the calendar. Although it still has twelve months, there is no longer any direct connection to the phases of the moon and the varying lengths of the months are actually illogical. The seven day week, however, has become an integral part of everyday life and would be very difficult to change.

My personal preference would be a year of thirteen identical months of twenty eight days, each of four weeks. Every month would begin on Sunday and end on Saturday. The year would be completed with an extra holiday (New Year's Eve?) following the thirteenth month. Leap years would have an additional extra holiday at the end. The current year 1989, would have been a good time to start this new calendar since it already started on a Sunday. The Vernal Equinox by the way, would occur on the 24th day of the third month, whatever its name might be. I am sure that there would be strong resistance from the Calendar publishing lobby since this would be a perpetual calendar. The calendar would be identical every year. There would never be a need to buy a new calendar except to get a new set of pictures!

In addition to the above reform, I would add a new term to the formula for the mean length of the calendar year-:

(365+.25)-(1/100)+(1/400)-(1/3200) = 365.2422 days (rounded).

The new term, -1/3200, means that years divisible by 3200 would not be counted as leap years, whereas in the Gregorian calendar they would be. The agreement of this value with the true length of the Tropical Year would allow this Robinsonian Calendar to serve without error for about 1000 centuries.

But wait!! This article was supposed to be primarily about calendar programming techniques. I guess I just got carried away. Let us reduce the calendar to its fundamentals. As indicated above, the calendar year is basically just a string of numbers from 1 to 365 (or 366). The division into months simply converts it to a concatenation of strings from 1 to 31, 1 to 28, etc.with allowance made for leap years.

Introduction of week days results in a need to "register" the date string to the repeated weekday string. But this simply requires that we determine the "offset" of January 1 from the first Sunday of the year. The rest of the year takes care of itself. If we think about these statements for just a moment we should see how very simple the problem is. The names and lengths of the months, as well as the weekdays, are predetermined. All we need to define a calendar, for any year, are two items of data-:

1. What is the offset for January 1st?

2. Is it or is it not a leap year?

The included program, for convenience actually computes the offset for each month individually. This way, a slight modification will allow the program to compute and print a single month.

So, finally, let us take a look at the program. Lines 18 and 20 contain the names and lengths of the months. Line 22 forms a string of weekdays and line 24 does the same for the dates 1 to 31 in four character blocks. Thus a week fills up BASIC's twenty eight column screen. Note the printer OPEN statement in line 28.

The mainline program starts with the loop at line 30, which reads the twelve months' names and lengths and calls the subprogram MONTH. MONTH then computes the number of days elapsed from a hypothetical zero date to the first day of the current month, allowing for all leap years. Line 48 then converts that to a modulo 7 number (0 to 6) which is the number of weekdays preceding the first date of the month. Line 32 adds a day to February if Y is a leap year. Line 34 uses L to take the proper segment of MS, and B to add the proper number of blanks to the front of MS for the offset. Line 36 then displays and prints the month.

Lines 30 through 50, just twelve lines, comprise the essence of the program and it computes, displays and prints an accurate calendar for any year later than 1582, with six months per page. With relatively minor modifications the program could be tailored to print in any desired format.

```
10 ! SAVE DSK6.CALENDER
11 ! CALENDER PROGRAM
12 ! by Adrian Robinson
13 ! ROM Newsletter, August 1989
14 !
16 ON WARNING NEXT :: CALL CLEAR
18 DATA JANUARY,31,FEBRUARY,28,MARCH,31,APRIL,30, MAY,
31,JUNE,30
20 DATA JULY,31,AUGUST,31,SEPTEMBER,30,OCTOBER,31,
   NOVEMBER,30,DECEMBER,31
22 W$=" SU  MO  TU  WE  TH  FR  SA "&RPT$("-",28)
24 M$="" :: FOR I=1 TO 31 :: M$=M$&RPT$(" ",3-LEN(STR$
(I)))&STR$(I)&" " :: NEXT I
26 INPUT " YEAR: ":Y :: IF Y<1583 THEN PRINT "YEAR MUST
 BE LATER THAN 1582": : : GOTO 26
28 OPEN #1:"PIO",DISPLAY ,VARIABLE 28 :: PRINT #1:Y: :
30 FOR M=1 TO 12 :: READ MO$,L :: CALL MONTH((Y),M,B)
32 IF M=2 THEN IF (Y/4=INT(Y/4))-(Y/100=INT(Y/100))+
   (Y/400=INT(Y/400))THEN L=L+1
34 D$=RPT$("    ",B)&SEG$(M$,1,4*L)
36 PRINT " ";MO$:W$:D$: : :: PRINT #1:" ";MO$:W$:D$: :
37 IF M=6 THEN PRINT #1:CHR$(12): : :
38 NEXT M :: CLOSE #1 :: END
40 SUB MONTH(Y,M,B)
42 F=365*Y+31*(M-1)+1
44 IF M>2 THEN F=F-INT(2.3+.4*M)ELSE Y=Y-1
46 F=F+INT(Y/4)-INT(Y/100)-INT(Y/400)
48 F=F-1 :: B=F-7*INT(F/7)
50 SUBEND
```

```
100 ! SAVE DSK6.CALENDER1
110 ! CALENDER PROGRAM
120 ! by Adrian Robinson
130 ! ROM Newsletter, August 1989
140 ! Printout mods by Ross Mudie
150 DIM P$(12,9)
160 ON WARNING NEXT :: CALL CLEAR
170 DATA JANUARY,31,FEBRUARY,28,MARCH,31,APRIL,30, MAY,
31,JUNE,30
180 DATA JULY,31,AUGUST,31,SEPTEMBER,30,OCTOBER,31,
   NOVEMBER,30,DECEMBER,31
190 W$=" SU  MO  TU  WE  TH  FR  SA "&RPT$("-",28)
200 M$="" :: FOR I=1 TO 31 ::
   M$=M$&RPT$(" ",3-LEN(STR$(I)))&STR$(I)&" " :: NEXT I
210 INPUT " YEAR: ":Y :: IF Y<1583 THEN PRINT "YEAR
 MUST BE LATER THAN 1582": : :: GOTO 210
220 OPEN #1:"PIO",DISPLAY ,VARIABLE :: PRINT #1:TAB(28)
;CHR$(14);Y:
230 FOR M=1 TO 12 :: READ MO$,L :: CALL MONTH((Y),M,B)
240 IF M=2 THEN IF (Y/4=INT(Y/4))-(Y/100=INT(Y/100))+
(Y/400=INT(Y/400)) THEN L=L+1
250 D$=RPT$("    ",B)&SEG$(M$,1,4*L)
260 PRINT " ";MO$:W$:D$: : :
270 P$(M,1)=MO$ :: P$(M,2)=SEG$(W$,1,28):: P$(M,3)=SEG$
(W$,29,28):: P$(M,4)=SEG$(D$,1,28):: P$(M,5)=SEG$(D$,29
,28)
280 P$(M,6)=SEG$(D$,57,28):: P$(M,7)=SEG$(D$,85,28)::
   P$(M,8)=SEG$(D$,113,28)
290 IF LEN(D$)>141 THEN P$(M,9)=SEG$(D$,141,28)ELSE P$
(M,9)=""
300 NEXT M
310 FOR M=1 TO 12 STEP 2
320 FOR L=1 TO 9
330 IF L=1 THEN PRINT #1:CHR$(14);TAB(3);P$(M,L); TAB
(22);P$(M+1,L)
340 IF L>1 THEN PRINT #1:TAB(2);P$(M,L);TAB(40); P$(M+1
,L)
350 NEXT L
360 PRINT #1: :
370 NEXT M :: PRINT #1:CHR$(12):: CLOSE #1 :: END
380 SUB MONTH(Y,M,B)
390 F=365*Y+31*(M-1)+1
400 IF M>2 THEN F=F-INT(2.3+.4*M)ELSE Y=Y-1
410 F=F+INT(Y/4)-INT(Y/100)+INT(Y/400)
420 F=F-1 :: B=F-7*INT(F/7)
430 SUBEND
```

END OF ARTICLE

The Ten Commandments

for Computer Ethics

- 1. Thou shalt not use a computer to harm other people.
- 2. Thou shalt not interfere with other people's computer work,
- 3. Thou shalt not snoop around in other people's files.
- 4. Thou shalt not use a computer to steal.
- 5. Thou shalt not use a computer to bear false witness.
- 6. Thou shalt not use or copy Software for which you have not paid.
- 7. Thou shalt not use other people's computer resources without authorisation. -
- 8. Thou shalt not appropriate other people's intellectual output.
- 9. Thou shalt think about the social consequences of the program you write.
- 10. Thou shalt use a computer in ways that show consideration and respect.

ARTIST CARDSHOP TIP

By Ron Warfield
B.C. 99'ers users croup
From the pages of the West Penn 99ers NEWS.

I use Artist Cardshop a few times during the year and enjoy it very much.

After I got my 24 pin printer I noticed that the cards are now much longer than they used to be.

To fix the problem I used a sector editor to search for the printer codes to see what they were set at.

I found the codes were for 8/72 line feeds on an Epson printer.

Well, when you have a 24 pin printer tile same codes sets the printer to 8/60 line feeds. hence the longer picture.

Well, to convert this to a better line feed you have to find something a little closer to 8/72 only in 180th or 360th line feeds.

Well 20/180 is almost perfect. so I changed the codes and it now works perfectly.

To do this. first make a backup copy of your Artist Cardshop disk.

Then, working with your backup copy. sector edit the file
PRINTU. search for the string 184108 and change it to 183314.

END OF ARTICLE

You will Never be Sorry

Thoughts from the pantry - submitted by Judy Wagner

from the : TI ORPHANS of PUGET SOUND newsletter.

- For thinking before acting.
- For hearing before judging.
- For forgiving your enemies.
- For helping a fallen brother.
- For standing by your principles.
- For stoping your ears to gossip.
- For bridling a slanderous tongue.
- For being courteous to all.

TiSHUG Software File Review
MAY 1996
Editored By Larry Saunders

THE TIGERCUB 6-MEMORY 6-WINDOW 34-FUNCTION 14-DIGIT PROGRAMMABLE CALCULATOR

by Jim Peterson, Tigercub Software

I always wanted a calculator with more than one memory, and a window to display the contents of each one. The computer has plenty of memory, and the monitor screen has plenty of room for windows, so I wrote a 6-memory 6-window calculator.
Recently I decided to go back and upgrade that old program. By the time I got through I had a 6-memory 6-window 34-function programmable calculator with many other features.

It was necessary to write this program to accept either numeric or alphabetic data and then sort it out. For this reason, it does not respond as instantly as a calculator. However, I think it does some things that few if any calculators can do.

When you boot this program, the screen displays 6 memory areas marked U through Z, and you are asked if you want to label them. That will help a great deal in keeping track of what you are using them for. The computer will force you to unlock the alpha lock and label them in lower case, which will make them stand out nicely in inverse video.

Next you are asked if you want a 14-digit display. Unlike the 8-bit PCs, the TI calculates to 14 digits of accuracy, but normally rounds them off to 10 digits for screen display. This option will display the full 14 digits, if it is not more than 9,999,999,999 or less than -9,999,999,999.

You are required to depress the Alpha Lock again to answer this prompt, and it must stay depressed thereafter.

Then you are asked if you want to use conventional or straight-line mode. Conventional mode is much like you would use with an ordinary calculator - you must press Enter after you input each value, but not after each function. For instance, 77 (Enter) + 81 (Enter) = .

In straight-line mode you simply type 77+81= (Enter), which is a bit faster but the computer then pauses for a few seconds to decipher the input before giving the answer.

If you want to enter large numbers in exponential notation, you must use the conventional mode.
To switch from one mode to the other, just enter J. The

mode you are in is displayed in the upper right of the screen. Entering JJ will clear the memory labels and irretrievably clear all memories; Q will terminate the program.

If you use the =, the result is simply displayed on screen, but if you use a memory name (U through Z) the result is placed in that memory and displayed in its window. For instance, 77+81X puts 158 in memory and window X.

You can also enter a memory name to calculate with the value it contains. For instance, U (Enter) + 81 (Enter) V adds 81 to the value from U and puts the result in V . W+XY adds the values in W and X and puts the result in Y. U+UU would double the value of U.

To poke a value into a memory, just enter a value and a memory name, such as 77 (Enter) U, or in straight-line 77U.

The four basic functions are + (located on Shift =) for adding, - (located on Shift /) for subtracting, / for dividing and * (located on Shift 8) for multiplication. All that shifting is a nuisance, especially if you are using one hand to keep track in a column of figures. To make it easier, you can use P (plus) for +, M (minus) for -, D (divide) for division, and T (times) for multiplication. The correct symbols will still appear on screen.

Other available functions are ^ (power), % (percent), and R (root). 10 (Enter) ^ 2 (Enter) = will give you 100, which is 10 to the power of 2. 10 (Enter)* % 100 (Enter) = gives 10 which is 10% of 100. 3 (Enter) R 64 (Enter) = gives the 3rd root of 64, or 4.

FCTN U, which is _, will give you the value of pi. _ (Enter) * 10 (Enter) = multiplies pi by 10.

When you enter a problem the name of the function you used, such as "addition" is highlighted in inverse video at the bottom of the screen, so you will know if you made a mistake.

With this calculator, you can even enter a series of calculations. In conventional mode 67 (Enter) + 33 (Enter) / 2 (Enter) * 5 (Enter) U or in straight-line mode 67+33/2*5U (Enter) will add 33 to 67, display the result, divide by 2, display the result, multiply by 5 and put the value in U. You are limited only by the line length of 28 characters. But I said this calculator has 34 functions. Where are the other 26? TI Basic has a few other math functions, and in Appendix K of the Extended Basic Manual you will find the algorithms for 20 advanced math functions. I have no idea what those do, but I programmed them into my calculator. Here they are -

CTRL A atn
CTRL N inverse cotangent
CTRL B cosine
CTRL O hyperbolic sine
FCTN A exponent
CTRL P hyperbolic cosine
FCTN B log
CTRL Q hyperbolic tangent
CTRL E sine in radians
CTRL R hyperbolic secant
CTRL G secant
CTRL T hyperbolic cotangent
CTRL H cosecant
CTRL U inverse hyperbolic sine
CTRL I cotangent
CTRL V inverse hyperbolic cosine
CTRL J inverse sine
FCTN G inverse hyperbolic tangent
CTRL K inverse cosine
CTRL X inverse hyperbolic
CTRL L inverse secant
CTRL Y inverse hyperbolic cosecant
CTRL M inverse cosecant
FCTN W inverse hyperbolic cotangent

To use one of these, enter a value, then a FCTN or CTRL and = or a memory name. 8 (Enter) FCTN A U will put the exponent of 8 in memory U. Be warned that entering invalid values in some of these will cause a numeric overflow or underflow and, since I have turned off ON WARNING to avoid spoiling the screen display, you will not be informed.

You don't have any use for those? Well then, you can reprogram them for any functions you do need. They are in lines 760 through 1080. Be sure to use A for the value being input, C for the result. C=A-.1*A+.06*A will return the value of A minus a 10% discount, plus a 6% sales tax. If you need additional variables, put their values in your memories and reference them in your equation, using M(1) through M(6) for memories U through Z. C=A*M(1)/M(6) will multiply A by the value in U and divide it by the value in Z. You can write multiple-statement equations, even multiple-line equations. Use J as a loop counter, @ for an internal variable; if you need other internal variables, use some that are not in the prescan list in line 110, and add them to that list. When you type the name you want displayed, use lower-case letters, and use FCTN C rather than the space bar for spacing. You can easily customize this calculator with a couple of dozen formulas for whatever field you are working in.

To access the base conversion mode, enter B. You will be able to convert any number from/to any base from 2 to 36. To escape this mode, enter 0 for the value to be converted.

You find it difficult to remember all those commands? At the prompt for the first value or command, just press FCTN 7 for a Help screen. Thanks to Karl Romstedt for that one.

I said this was a programmable calculator, and I was not just referring to the fact that you could reprogram those 26 functions listed above. This calculator lets you enter an equation; the program then rewrites itself while it is running, and uses the equation to solve whatever values you give it.

To get into programming mode, enter #. You will be prompted to enter a formula. This must be in the form of a valid Extended Basic statement, using A for the value to be determined and B through F, as many as you need, for the values you will be prompted to input. All math functions are supported. For instance, A=B^C-INT(SQR(C)). The program pauses to tokenize your input and then prompts you for values to use for, in this instance, A, B and C. You are then prompted for a memory name in which to store and display the answer.

Remember the mathematical heirarchy - if you want to add or subtract before multiplying or dividing, use parentheses - A=(B-C)*D/(E-F).

Sometimes you might want to total the values in all memories. Just enter & to total and display .

To clear all the memories, enter C. To clear memory X, for instance, enter CX (in either mode).

E is the oops! key. Enter E to restore the last previous values in all memories, or EU, for instance, to restore the last previous value in U.

Sometimes you may just want to add up a series of numbers. Enter A= if you just want the totals displayed, or AU, for instance, to accumulate the total in U. You are now in cumulative mode and each value you enter will be added to the total. Enter Q to get out of this mode. C and E are not active in this mode, and you cannot enter memory names.

If you want a hard copy of your work, enter FCTN 0 and the memory labels, names and values will be output to your printer. If you selected the 14-digit option, the printout will also be in 14-digit format.

To save your work, enter I to save all memories, or IU, for instance, to save a specific one. You will be prompted for a disk drive/filename. To retrieve the data, enter O for all memories or OV, for instance, for a specific one.

If your formula is not a valid XBasic statement, it will be rejected. If it is valid but incorrect for its purpose, it will give erroneous results; for instance, if you use X as a variable name, you will not be prompted for its value, which will be 0.

To exit the programmed formula, enter 0 at all prompts.

Finally, this calculator contains a programmable iterative calculator to solve such difficult problems as A=B^B-SQR(B), where A is the known value. These can only be solved by trial and error.

To access this mode, enter @. You will be prompted for a formula, which must be in the A=B format. The computer pauses to write the equation into itself, prompts you for a value of A, and goes through a series of trial and error calculations which are displayed on screen. Then you are prompted for a memory to receive the result.
To exit this mode, give A a value of 0.

I hope you find this program useful. I am releasing it to the public domain; I won't even bother to put a fairware donation request on it. However, if you do find it useful, would you spend 19 cents for a postcard to tell me so? The few remaining TI programmers are getting tired of releasing programs and never hearing a word about them. One of these days they may just decide to only release them to each other.

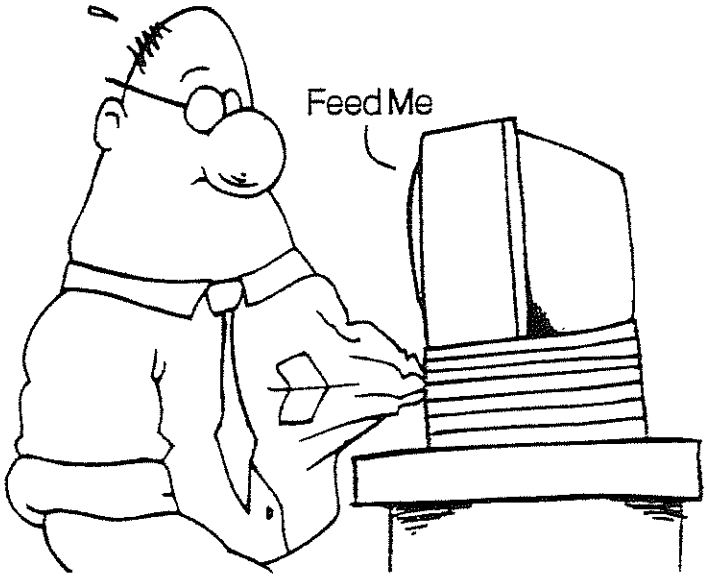
END OF ARTICLE

How to contribute to your Magazine

All or or posted to C/O 3 Storey St Ryde 2112 Australia
We are able to publish articles forwarded to us in the following manner.

- Printed letters or articles
- Articles left on the TI. BBS. IBM or TI computers can leave TEXT files.(PH. NO.02 4564606) *Free to all TIsHUG members*
- TI Computer floppy disks....5.25" DSDD or DSSD.....Text files, Funnelweb or TI Writer
- IBM compatible Floppy Disks.....5.25"or 3.5", we can process - text files, Word for Windows ver: 1.0 - 6.0, WordPerfect, and Word for Macintosh ver: 5x. (on a IBM formatted disk)

These items can be posted to the above address or could be handed to the Editor or one of the Club Directors. Please put your name on the disk so it can be returned



EDITORS COMMENTS

At our last meeting, even though it was a public holiday there were quite a few people taking advantage of the calm weather and of course our friendliness. whom were treated to Ross giving a blow by blow commentary on how to work your way through the TI BBS. what key's do what ...etc.
Geoff Trott was there fixing little problems for members who had brought along their computer's.
There were two IBM's set up that I saw. one was the clubs system and the other was been used to show how you can find RECIPES .. yes recipes for cooking, this program could sort, find and print recipes that were in its data base

I've been lead to believe that the TI BBS will be on show next APRIL so come along and see what is happening.

END OF ARTICLE

PAGE PRO 99 TIPS

by Mickey Cendrowski

From the pages of the West Penn 99ers NEWS, July 1995

Page Pro 99 Modification for 24 pin printers

After reading Ron Warfield's Artist Cardshop Tip for 24-pin printers, I got to wondering if the same procedure might hold true for Page Pro and 24-pin printers.

Well . . . .wonder no more . . . . Cause I'm here to tell you that it does. So . . . -

If you are using Page Pro 99 and wish to print your pages with your 24-pin printer, this is what you do.

First. make a backup copy of your Page Pro 99 disk.

Then. working with your backup copy, sector edit your disk, searching for the string, 184108 and change it to 183314.

That's all there is to it!

Your Page Pro 99 page should now print out correctly, without printing one page out at one and one third pages, and without the venetian blind effect.

Thanks, Ron, for giving me the idea to try this.

Now . . .

Can anyone out there shed some light on how we can get Page Pro Composer to work with out 24 pin printers?

I tried using the same procedure as with Page Pro 99, but was not successful.

Perhaps someone reading this article could help.

If so. you may write to me at the following address:

Mickey Cenrowski, 100 Pine Street.
Russellton, Pa. 15076

END OF ARTICLE

RIGHT JUSTIFIED

from OSHTI. JM. 1995
from the PUG Peripheral. March/Apr. 1995

Here is an interesting thing that has been added to Funnelweb 5.01.

For those of you who want to print out our documents (text files) using the EDITOR and still would like to have them RIGHT JUSTIFIED (all the columns line up at the right margin) then this is for you.

Type your text a you would normally using the word-wrap mode. When you have finished your paragraphs, just go to the first word of each paragraph and press insert (FCTN 2). Then press CTRL R and watch what happens. The FunnelWeb editor will put in spaces and fill each line until your right margins are all justified. This is really neat. as Charlie Good would say, Me too!!

You can then use PF (print file) to print the text from the screen. You don't have to go through the formatter] and worry about the 3 lines at the top and bottom of each page. What you see in the screen will be what you get. of course, the IBM character set will also be printed so that you can get Boxes or fancy Greek symbols or whatever. You just have to try this! Oh YES, if you DO NOT want to have the right justification on Reformatting (using CTRL R) then use CTRL 2 instead. Try it and see the difference. This effect (CTRL R) has saved me time and anguish in preparing this newsletter. It saves time because I do NOT have to go through the FORMATTER to get my text right justified. It saves the anguish of having to worry if the @ and & signs will print out properly. Now I just type and go back and reformat each paragraph with CTRL R and then save the file using PF with C DSKx.TI-95x; C is to remove the control characters like line feed and carriage return . . . Tom Jacobfy

END OF ARTICLE

CD ROM INFO:

Now that you have a CD ROM, you need some information on how to access the data on it. Here are some particulars:

ISO-9660 CD ROM discs have a universal format. It does not matter what the CD ROM contains as far as data is concerned, but whatever it contains either programs or data files, the encoding method is ISO-9660 format. This format is neither MS-DOS, Macintosh System-7, Unix, or whatever. It is Unique, and easily adapted to any operating system. ISO-9660 format is a file and directory structured format, and it has features that our TI Filesystem can take advantage.

First, for all readers, there is a point I wish to clarify. Having CD ROM online, and even if you load programs (by whatever means we develop) it does not mean you can run MS DOS programs. No, you cannot run DOOM on your TI. Nor can you run multimedia encyclopedia programs on your TI. What you can do with CD ROM (after a disc cataloguer and transfer utility is finished) is:

- catalog CD ROM discs. View data files and text files which are on the disc.
- copy files from the CD ROM to your hard disk and/or floppy disk.
  This is handy for a disk of archived files, and you need to run archiver on floppies only. Currently, Boone's archiver 3.03 does not access any storage device except floppies. So you must copy the archived file to a floppy first to unpack it. Then you can run it.

Files which are of immediate use if copied to your hard or floppy disk:

- GIF files. These can be viewed or loaded into YAPP or Picture Transfer. YAPP or Picture Transfer cannot load files directly off CD ROM discs. However, if MDOS file support exists for CD ROM, then Picture Transfer can directly load a GIF off a CD ROM.
- VOC and SND and other sound files. These can be loaded and played off floppy or hard disk. Again if MDOS file support exists for CD ROM, then you will be able to load sound files directly off CD ROM discs.
- ASCII databases, such as encyclopedia databases or spell checker databases. These can be imported and used. Or custom applications can be written to use these. Again, if MDOS file support exists for CD ROM, programs like TI BASE can possibly directly access data if imported into the program. Native databases are not TI BASE compatible they are usually MS DOS relative record format, which can be read by extended BASIC programs and processed, but remember, you can only read from a CD ROM, so unless you write a custom application to DIRECTLY use the database, it is more cumbersome to use the CD ROM than just a hard disk drive.
- TEXT files, such as information files. If these are ASCII then you can read and print them.

Files on CD ROM which are USELESS to the TI User:

- MS-DOS or Mac programs (or any other programs) which have been stored on CD ROM. These programs are machine-specific, and will NOT run on a TMS-9900 based machine. This includes all your favourites. DO NOT expect that a CD ROM drive will add MS-DOS/Intel/Motorola compatibility to your TI...It WILL NOT!! Even though a cataloguer will be able to copy any PROGRAM or FILE on a CD ROM, you cannot then run the program on your system.
  I hope I have been clear on this. There is NO 8086 chip in CD ROM

  drives..there has been much inquiry into this, and I want to make

  it clear. One of the most frequently stated things these days is

  "...I want a CD ROM on my TI so I can run those great MS DOS programs.."

  Well. Sorry! This isn't going to work. If you really want to run MS DOS programs then get a MS DOS computer.

  Files on CD ROM which can possible be of benefit for future:

There is a project which has been in the works for some time now, but it has of late taken less interest and may not be completed due to lack of interest. The idea is to take TI programs and files from User's group libraries and store them on CD ROM. If I were doing this, I would first archive each disk to a file, then give the archive file the same name as the disk it holds. I would do this for each disk in the group library. Say if a library has 300 disks, each SS/DD (90k) or less. Archiving them with compression will create many files on a hard disk. I would then upload these files (or use PC TRANSFER) to copy them to a MS-DOS hard disk.

This I would repeat for each library. I would then organise the archive files in some logical separation (Educational/Games/Graphics/Utility /programming/word processing/business) and then, I would create a small description of each archive file. This would aid in searches. Once this is all done, I would then back up my MS-DOS hard disk containg the archive files in logical directory format, to a tape. Then, I would send the tape to a CD ROM encoding place, and order a certain number of the CD's to be encoded. They would then transfer the files to the disc in such a way that any CD ROM driver for an MS DOS machine would view the CD ROM as if it were just a big hard disk. That is ISO-9660 format. The

Driver that runs on the MS-DOS PC is simply a translator. It translates ISO-9660 format to MS-DOS disk format. So a CD ROM "appears" to be MS-DOS format. It is, in fact, still ISO-9660 format. And, if you place the disc on a TI equipped with a CD ROM, there is nothing preventing you from accessing that library set of archives. Nothing, that is, except the program to do it all. We now have the hardware to do this, and there is interest in the community for this level of library archive access. It will take commitment from both the community and the programmers to bring both the CD ROM itself to the TI, and the program which catalogues and copies the archives.

Running TI programs on a CD ROM.

This is a much more involved project. In the above procedure, the CD ROM is simply a storage library, and since all the library disks are archived, you must first copy the desired archive to floppy, extract the disk information, and then you are free to run the program, FROM FLOPPY. If the program is designed to run on a floppy, as MANY TI programs are, then it is nearly impossible to change the program to run from a CD ROM. Only programs that can run and fetch it's data files from ANY device (user configurable) can the program run from CD ROM. A good clue to this is if you have a program and want to know if it will run from CD ROM. first check to see if the program will run from a hard disk drive. And I don't mean DSK. or DSK1 emulation or EMULATE files. Say you create a directory called GAMES, and store your games in that directory. If you can run the games without having a floppy disk online, you are in luck. Some programs, like TI CASINO, load data files from DSK1. The program uses MANY data files and subprograms. Only by changing this pathname to a CD ROM path, such as CDR1.path.path.path.filename, can the program successfully run on CD ROM.

Ok, so you have separated the apples from the oranges. You have a set of programs which can run from CD ROM directly; you also have a set of programs which can run from CD ROM if the data paths in the program have been changed to a specific CD ROM pathname; you have a set of programs which absolutely cannot run from anything other than floppy disk, due to certain loaders and filename length limitations. Others have problems with the actual device name. We cannot just name a CD ROM device DSK1 and expect it to work. It won't. DSK1 emulation was difficult enough with the HFDC, it is impossible with CD ROM for several technical reasons. In any case, you are now faced with two tasks.

1) take the programs which can run on ANY device, and place those in an organised structure on a fresh hard disk (SCSI) formatted to the exact size of the CD ROM you are planning on encoding.
2) Take the programs which must be modified, one at a time, then plan where they are to be located on the CD ROM. Create a subdirectory structure on the hard disk to contain the path of the program. Then store the program in the directory. Make sure the pathnames in the program match the intended CD ROM pathname. Do this for every program you wish to run. This isn't such an easy task if you have to modify assembly language programs, because of limitations on pathname lengths. Other programs do not have GPL program calls to the >2X subprograms which would be required for any hard disk structure access. They may appear to be runnable from hard disk but won't.
3) Once the disk is full of programs (I'm talking about 500 megabytes, several years hard work at minimum) then you must transfer the contents of the hard disk to the CD ROM. Since encoding houses don't read special disk formats, you will have to encode the CD ROM yourself. This means purchasing a Geneve, a $4000 encoding box, and then you must run the encoder. Blank CD ROM's can be bought for $25.00 at some computer mail order houses. You need a Geneve, because it is the only computer fast enough to keep up with the transfer rates of the encoder, and compatible with the TI file format.
4) Of course, you need the encoding program in addition to all the years' work of storage and modification of the programs and games. This program can be written but in order to test it you need at your disposal many of the $25.00 tests...more costs associated with the project.

Therefore, it isn't such an easy task to create a CD ROM which is capable of providing runnable programs for the TI. Rather, it is a more likely scenario that you get a big hard disk and store your programs on the hard disk.

Having an archive library CD ROM, to me, is most desirable. IT is still not likely, unless people get involved, so CD ROM for the TI is not going to mean anything unless we can get media encoded on CD ROM that the TI can use. I cannot do this. I can write programs but I cannot create media to be used with the programs. It is useful, yes, the few who can read GIF files or sound files, but unless there is a TI Archive CD ROM made, it is no more than a curiosity. I am just hoping to set the record straight and hopefully you all can understand the implications of CD ROM for the TI. The first use of CD ROM, then, most likely will be BBS systems. First, a driver for existing BBS systems to allow online catalog and file transfer from the CD ROM. There are plenty of CD ROM's out there that would provide plenty of GIF's and sound files to callers. If a TI Archive CD ROM is ever made, it will be a jewel on any BBS. I therefore submit some technical information on CD ROM discs to get some programmer's on the bandwagon. It isn't a difficult project, but it does require time and involvement.

Michael J Maksimik CD ROM Format (a summary of ISO-9660).

Data Areas are arranged on CD ROM in four descriptors:

- Volume Descriptors
- File Descriptors
- Directory Descriptors
- Path Tables

Volume Descriptors are recorded in consecutive sectors starting with sector 16.

Sector Sizes on CD ROM discs is 2048 bytes. Clusters on the CD ROM, called Extants, are logical groupings of sectors. An Extant is used to contain a file section. Files are stored as contiguous bytes, divided into consecutive sectors. File sizes are indicated as total number of bytes. Each file starts at a certain logical sector and continues to occupy consecutive sectors (each sector 2048 bytes, or 2 to the nth power larger than that if indicated as the logical sector size within the extant) until the file is exhausted. Logical sectors are numbered as unique 32-bit numbers. File Sizes are also 32-bit values. Therefore, the largest file that can be stored is 4.29 billion bytes. This is larger than the potential size of the CD ROM. Therefore, the numbering scheme is plenty to allow for the largest and smallest of files.

File attributes:

- records can be fixed or variable length
- The maximum record length is 32k. That is, a single line of a file can be 32k long or less.
- file can have a name and extension.
- filenames can be up to 30 characters.
- discs and files are all date and time stamped
- unlimited number of files in a directory.
- unlimited number of subdirectories in a directory.
- owner and group permission attributes

There are many more attributes and specific bytes too numerous to mention here. You can get the ISO-9660 specification from Global Engineering Documents, (714) 261-1455 or (800) 854-7179. Specify ISO-9660 international standard. The document is 32 pages and it technically oriented. If you understand the Myarc Hard disk format, you will have little trouble with this document. Given this document, a properly installed and confugured CD ROM drive on your TI/Geneve, a CD ROM disc and some patience with programming, a developer can open the world of CD ROM for the TI/Geneve.

Refer to my CDREAD_C code which allows access to any CD ROM sector.

Given that code, transfer utilities are days away!

I am already well on my way. I wish you well on your endeavours.

END OF ARTICLE

The IBM SHOP

with Cyril Bohlsen

42mB Seagate ST351A/X HDD IDE	$ 45.00
3.5" Disk storage box (100 cap)	$ 10.00
5.25" Disk storage box (100 cap)	$ 10.00
Parallel printer cable 2M	$ 5.00
3 Button mouse	$ 14.00
Mouse pad	$ 1.50
3.5" FDD mounting kit	$ 6.00
3.5" power adaptor cable	$ 6.00
Mouse adaptors 25M to 9F/M	$ 5.00
Mouse adaptor 25F/M to 9M	$ 5.00
15-9 pin "D" adaptor for Monitor	$ 6.00
Joystick "Blastick" (IBM)	$ 20.00
CPU fan & heat sink	$ 8.00
486 SX-25 CPU 5V (Intel)	$ 20.00
486 DX-2/66 CPU 3.45V Texas Inst.	$ 60.00
486 DX-2/66 CPU (IBM)	$ 60.00
4mb Simm 72 pin 70ns with Parity	$ 200.00
1mb Simm 30 pin 70ns with Parity	$ 55.00
256k Simm 30 pin with Parity	$ 20.00
30-72 pin Simm adaptor	$ 25.00

KTX Work & Play Mega Multimedia Pack
Quad speed CD-ROM 16 Bit Sound Card
Sterio Speakers, M/S Titles $ 325.00

For current pricing of items not listed please contact Cyril Bohlsen at the general meetings or Phone (02) 639 5847

NOTE : All prices listed are at time of printing, and may change at any time. Prices do not cover posting and packaging.

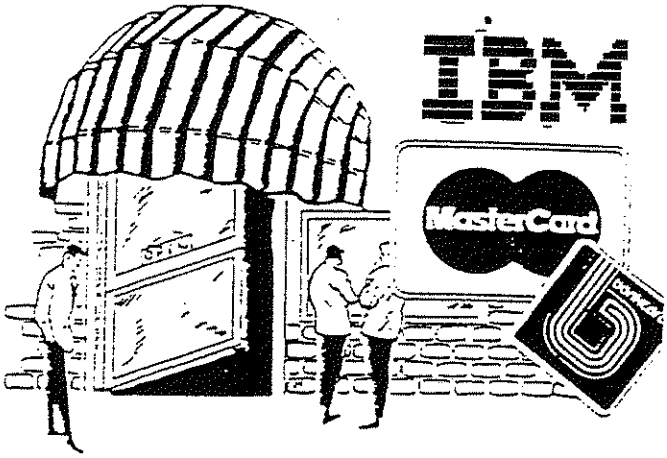


IMAGE SCANNERS

RESOLUTION

* Most people confuse resolution and quality. It's like confusing sound level and sound quality: At the same level, a $ 50 radio cassette player won't sound as good as a top quality HiFi system !

* A minimum resolution is required to capture a detail of the original image, but this resolution is usually a lot lower than people realise.

* Past this minimum resolution, image quality is determined by :-

    * CCD image sensor quality (this measures the light)

    * Lens quality

    * Low noise scanner electronics and good overall scanner design

    * Hardware calibration

    * Scanning software and software calibration

    * User !

* Too much resolution means unnecessary large files, long scanning times, very long printing times and can even result in a lower quality.

RESOLUTION ACCORDING TO ORIGINAL IMAGE TYPE

* There is no point scanning at a higher resolution than the original image contains.

* It is more important to look at what QUALITY you obtain at a given resolution (colour accuracy, sharpness, free of distortions), ease of use of your scanner and software features. At the same resolution one scanner can pick up fine detail that another scanner fails to capture !

	Level of detail (v. approx.)
Image in magazine	120 - 150 dpi
Image on brouchure	133 - 200 dpi
Family pics. (photo print)	200 - 400 dpi
Professional shot & print	around 400 - 600 dpi
Bromide (line art)	1,000 to 2,400 dpi
Slides & negatives (amateur shots)	900 to 1,800 dpi
Professional film shots	Heaps more !

SCANNER TYPES

TYPE	HOW IT WORKS	TYPICAL PRICE	SCAN AREA	COMMENTS
HAND HELD	Moved by hand above the document to be scanned.	$ 100 to $ 400	Limited to 4" strips	* Usually proprietary interface card, low cost software and very limited support. * Software often restricted to work with hand-scanner (can't be used with flatbed scanners). * Image quality affected by hand movement. * Anything larger than 4" wide must be scanned in strips and stitched together (laborious & affects quality).
SHEET-FEED	You feed the document through like you would with a fax machine.	$ 300 to $ 800	A4 / Legal	* Image quality affected by skewing or stretching. * The cheaper ones don't even offer true greyscale. * Very big variations in image quality. * Can't scan books or magazines and usually can't scan very small originals (e.g. passport photo). * Some units can cause fine scratches on photo being scanned.
FLAT BED	You place the document on a flat bed like you would on a copier.	$ 700 to $ 5000	A4 / Legal	* Most versatile. * Scan the widest range of originals. * Much better image quality than hand-held or sheet-fed. Clean scans (no distortion or skewing) first time. No mucking around. * The better quality flatbed scanners come with standard SCSI interface cards (faster & can be used with other devices) & offer industry standard quality software. * Quality ranges from general business use to professional.
FILM	Purely for 35mm slides and large professional film.	$1300 to $ 20000	35mm slides or up to 4x5"	* For professional users. Offer a much higher level of enlargement than flatbeds and even better quality. * Cannot scan photos. Only from slides & film.
DRUM	Image mounted around a rotating drum.	$ 30000 to $ 300000	From 8x6" up to very large	* Prohibitive cost & best possible quality. * Recommended when more than 300% enlargement to commercial printing is required or for difficult scans. * Slower to set up than flatbed scanner (image mounting takes time). Requires trained operator.

RESOLUTION v OUTPUT DEVICE for GREYSCALE & COLOUR

* Greyscale & colour images have shades making up a huge number of colours.

* If you look at an original photo, you can't see the dots (only the paper grain). It's a continuous tone image.

* Most printers cannot print continuous tones. In fact most colour printers only print 4 basic colours (cyan, magenta, yellow & black) but group several fine dots in such a way as to simulate a given colour.

* Most scanners can scan continuous tones (no gaps between each "dot" or pixel as it should be accurately called). This makes a very big difference ! This means a scanner only needs to scan a much smaller number of "dots" compared to a bubble-jet or laser printer needs to print a colour image.

* When printing a continuous tone image, it is better to refer to the output in Lines Per Inch, which reflects how many lines (or rows) with shades of grey/colour can be printed. The best way to understand line screens is to look at a photo in a newspaper. Because it is very coarse, the pattern is very easy to observe. Brochures are printed at a higher line screen (170 to 200 LPI) which meens you can't normally see the rows or dots unless you use a magnifying glass.

RESOLUTION v OUTPUT DEVICE for LINE ART

* Line art is straight black & white without shades of grey.

* Line art looks coarse at 300 dpi but looks very fine & smooth to most people from 600 dpi upwards.

	TYPICAL RESOLUTION	IN LINE ART	IN GREY & COLOUR
SCREEN	72 to 100 dpi Continuous tone	Scan at 150 dpi Line art looks coarse on screen. For screen presentation, try scanning in grey scale instead.	Using a high colour video card (at least 16 bit, preferably 24 bit), can display continuous tones. Scan at 72 to 100 dpi.
FAX	200x100 or 200x200 (fine mode) (not continuous tone)	Scan at 200 dpi	A coarse image will fax better. You only need to scan at 72 dpi!
LASER & INK-JET PRINTER	300 to 1200 dpi (not continuous tone)	Scan at your printer's resolution.	Scan at 100 to 300 dpi. As a rule of thumb scan at only 1/4 or 1/5 of your printer's resolution.
DYE-SUBLIMATION PRINTER	200, 300 (most common) 600 continuous tone	Scan at your printer's resolution.	Scan at your printer's resolution or a little more.
IMAGESETTER	1200 to 3600 (not continuous tone)	Top quality. Scan at 1200 dpi Only scan higher if you have extremely fine detail.	Scan at Lines Per Inch setting you wish to obtain multiplied by 1.2 to 2. Typically this means a 300 dpi scan.

TRUE RESOLUTION

It is hard to tell the true resolution of a scanner as many salesmen don't even know the true optical resolution of the scanners they are selling.

A true 300 dpi optical resolution scanner is normally advertised as 1200 or 2400 dpi and even 4800 with some brands.

Harware resolution	No. of pixles measured (/sq. inch)
300x600	180,000
400x800	320,000
600x600	360,000
1200x600	720,000

On a flatbed scanner, the element which measures the light is a row of sensors. The number of sensors (or cells) per inch is a true measure of the optical resolution.

This row is moved step by step down the flatbed, each step measuring a small slice of the image. For example, scanning at 600 dpi across the sensor can be moved 1200 steps to the inch.

This means the scanner actually measures 600x1200 = 720000 pixels per square inch, which is what is called the hardware resolution. This is the number of pixels it can actually measure.

Virtually all A4 size flatbed scanners on the market are either 300, 400, or 600 dpi TRUE optical resolution.

INTERPOLATED RESOLUTION

For line art, interpolation can be quite useful: for example, the scanner scans a 600 dpi greyscale image and can be convert it to 4800 dpi line art image. It can do this because the greyscale image holds more data than a line art image.

For greyscale and colour, interpolation simply means the pixels are multiplied using an averaging process ! It has no effect on the actual number of pixels measured: if a dot was not picked up by the scanner at it's hardware resolution, then you won't pick it up by interpolating. You can't multiply or enlarge something that's not there in the first place ! Interpolation past the hardware resolution of the scanner offers no real benefit.

If you need to interpolate an image past your scanner's hardware resolution, you can do this in Photoshop (or similar programme) once you've got the image looking just right. This should hold true for any brand of scanner.

As to 9600 dpi interpolated resolutions, that's not only unnecessary (due to the fact it doesn't improve the end result, in fact probably makes it worse) but generates ludicrous file sizes. Anybody saying otherwise, please ask them to scan a colour photo at 9600 dpi.

REGIONAL GROUP REPORTS

Meeting Summary For **MAY**

Central Coast	11/05/96 Saratoga
Glebe	09/05/96 Glebe
Hunter Valley	12/05 19/05/96
Illawarra	09/05/96 Keiraville
Liverpool	10/05/96 Yagoona West
Sutherland	24/05/96 Jannali

CENTRAL COAST Regional Group

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

GLEBE Regional Group

Regular meetings are normally on the Thursday evening following the first Saturday of the month, at 8pm at 135B Arundel Street, Glebe. Contact Mike Slattery, (02) 692 8162.

HUNTER VALLEY Regional Group

The Meetings are usually held on the second or third Sunday of each month at members homes starting at 3pm. Check the location with Geoff Phillips by leaving a message on (049) 428 617. Please note that the previous phone number (049)428176 is now used exclusively by the ZZAP BBS which also has TI support. Geoff.

ILLAWARRA Regional Group

Regular meetings are normally held on the first Tuesday of each month after the TIsHUG Sydney meeting at 7.30pm, at the home of Geoff Trott, 20 Robsons Road, Keiraville. A variety of investigations take place at our meetings, including Word Processing, Spreadsheets and hardware repairs. Contact Geoff Trott on (042)296629 for more information.

LIVERPOOL Regional Group*

Regular meeting date is the Friday folling the TIshug Sydney meeting at 7.30 pm. Contact Larry Saunders (02) 644-7377 (home). After 9.30 PM or at work (02)708 1987 Liquorland YAGOONA for more information.

*** ALL WELCOME ***

10 th MAY 1996
7 th JUNE 1996
12th JULY 1996
9th AUGUST 1996
13th SEPTEMBER 1996
11th OCTOBER 1996
8th NOVEMBER 1996
13th DECEMBER 1996

Bye for now Larry,
Liverpool Regional Co-Ordinator

SUTHERLAND Regional Group

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

TISHUG in Sydney

Monthly meetings start promptly at 2pm on the first Saturday of the month. They are held at the MEADOWBANK PRIMARY SCHOOL, on the corner of Thistle Street and Belmore Street, Meadowbank. Regular items include news from the directors, the publications library, the shop, and demonsurations of monthly software.

MAY MEETING - 4th MAY

JUNE MEETING -1st JUNE

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

11th MAY FOR THE JUNE MAGAZINE

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