

# NEWS DIGEST

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Focusing on the TI99/4A Home Computer

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Volume 13, Number 8

September, 1994

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TisHUG (Australia) Ltd.  
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## TisHUG News Digest

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

TisHUG News Digest

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# INDEX

<u>The Board</u>	
Co-ordinator	
Dick Warburton	(02) 918 8132
Secretary	
Robert Relyea	(048) 57 1253
Treasurer	
Cyril Bohlsen	(02) 639 5847
Directors	
Percy Harrison	(02) 808 3181
Thomas Marshall	(02) 871 7535
 <u>Sub-committees</u>	
News Digest Editor	
Loren West	(047) 21 3739
BBS Syop	
Ross Mudie	(02) 458 2122
BBS telephone number	(02) 458 4606
Merchandising	
Percy Harrison	(02) 808 3181
Software Library	
Larry Saunders	(02) 644 7377
Technical Co-ordinator	
Geoff Trott	(042) 29 8629

### Regional Group Contacts

Central Coast	
Russell Welham	(045) 32 4000
Glebe	
Mike Slattery	(02) 892 8152
Hunter Valley	
Geoff Phillips	(049) 42 8176
Illawarra	
Geoff Trott	(042) 29 8629
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\$85.00
Overseas Surface Dues	A\$50.00

### TisHUG Sydney Meeting

The September Meeting will start at  
2.0 pm on the 3rd September 1994  
at Meadowbank Primary School,  
Thistle Street, Meadowbank.

Printed by  
Kwik Kopy West Ryde

Title	Description	Author	Page No
And Things	Modem Advice	Geoff Warner	18
Co-ordinator's Report	General Interest	Dick Warburton	2
Editor's Comments	General Interest	Loren West	3
Hello BBS Users	Club News	Ross Mudie	10
Learn to Use Your TI Lesson 19	Programming	Percy Harrison	8
Mail from the BBS	Club News	Geoff Warner	7
PC to Page Pro	Tips	Alf Ruggeri	11
Conversion Revisited			
Regional Reports	General Interest	Various	23
Techo Time	80 Column Card	Geoff Trott	4
Tishug Shop	Club News	Percy Harrison	2
Tishug Software	Club News	Larry Saunders	3
Treasurer's Report	Club News	Cyril Bohlsen	17
Wanted	General Interest	Bob Relyea	17

### IBM INDEX

As Easy As Spreadsheet Program	Abacus	19
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### RAMDISK TIP

Here is a tip for using your ramdisk, which may be helpful at some time. I have often corrupted files on the ramdisk accidentally, usually by using DM1000, or switching it off. When the files get corrupted, they often overwrite the size of the file. One suddenly is faced with gibberish on screen with a file size of 8844 bytes. I know from bitter experience, that if I simply delete the file, it usually destroys the whole ramdisk, because the apparent file size is greater than the capacity of the ramdisk. This week I found a simple solution. Like Archimedes in the bath I suddenly saw the light. If I simply rename the file as ZZZ, it automatically becomes the last file where the headers are located on sector 1. Using disk patch in Funweb, I simply delete the last header. Problem solved. No file no corruption. It's a pity we couldn't apply the same logic to politicians.

Dick Warburton

## CO-ORDINATOR'S REPORT

It's been quite a hectic month for the committee, with the development of the 80 column card. We have been kept busy trying to find and purchase all the components for the cards. We have tried to keep our costs down, by buying at the lowest price we can. One thing I have learned, is that it really pays to shop around, the differences in price are quite remarkable. In one case the component cost ranged from \$4.00 to \$20 in two separate shops. Having finally located everything and bought all the parts, four of us met at Cyril's place to put them together. The others wouldn't let me do any soldering, possibly because the tip broke off my iron, and we started. Cyril didn't solder either, because he couldn't see the joints in the light, so he and I set up an assembly line to stick bits on the board. There were a few small problems like one shop gave us the wrong value resistors, and I bought wide bodied 24 pin sockets rather than the narrow ones. We soldiered on, fortified by some really nice coffee and cakes. Well, we have completed the first 10 boards, and have sent them off to Geoff for testing. We don't expect any errors, because of Rob Peverill's quality control, and my not being able to solder. I expect that we should be able to issue them next month, hopefully with full instructions on installation, and any adjustments needed for the monitor.

We really have to congratulate Geoff on another fine addition for our TIs. Is there no end to what he can do? I have no doubt we could make a few suggestions. What else would you like on your TI? Ross Mudie uses a ramdisk built into his console, wired on verro board. What a useful expansion this is. Ross tells me however that it still needs to use some of the disk controller routines, and locks up at times without them. I have recently checked the price of static ram chips, and they are getting really cheap. The capacity of the chips has increased enormously, and it seems to me that a very useful ramdisk, with an operating system on eeproms could be built both economically and take up very little room in the console, if the operating routines can be solved. With this addition, the TI would become a very useful machine to carry round for word processing. Is such a task beyond the Wollongong Whiz Kid? I doubt it. Remember, Wollongong has produced talent like Wayne Gardner and Norman Gunston, and now Geoff Trott. PS. I forgot to mention Rolf Schreiber.

One of the other developments which has interested me lately, has been the introduction of the TI Emulator program for the IBM clone. I have moved a few programs across, and some of them run really well. On my 386 DX-33, the programs are speeded up considerably. I suspect that with faster chips, there would be really good performance. At this stage we can run most programs written for the TI. Mike Slattery, another unrecognised genius within the club, has been writing a program for me to use at work. The main file in extended basic, takes up 60 sectors, and there are many supplementary files. It runs almost faultlessly. The author has done a remarkable job. There are just a few bugs if you use windows, like you can't close an application, and have to crash out of the program. Well I don't find that very different from my normal efforts, so it feels comfortable, but the other problem is perhaps more worrying, because it seems to use

up all the available memory, and later programs will not load. despite the bugs, it is a fantastic program, and I have had a lot of fun putting it on the machines at work. Our computer expert was quite puzzled to see a TI screen come up on the machine.

Well, that's all for now folks,  
See you at the next meeting.

Dick Warburton

**END OF ARTICLE**

## TISHUG SHOP.

with Percy Harrison.

Shop takings at the August meeting were somewhat disappointing with the sale of software programs well down on previous months. I guess one reason for this is the drop-off in availability of new programs, especially games, for the TI. If any of our overseas members have any TI programs that we have not released through the shop we would appreciate receiving a copy from them so that we can continue to cater for the needs of our members.

Over the past month I have received a number of orders for the Programmable Calculator and Print-all programs that were written up in the August TND. Both of these write-ups were reprints from a previous issue of TND and as such were released some time ago on Disk TC 911 and TC 1015 respectively so before ordering either of these two disks please check your library to make sure that you have not already purchased the disks when they were first released in June 1992.

For purchasers of IBM Compatible Programs please be advised that, contrary to my previous decision to prefer issuing programs on 5.25 High Density disks, all future releases will be on 3.5 High Density disks. This has been deemed necessary because of the size and nature of IBM compatible programs available to us and the difficulty and time it would involve trying to recopy them on the 1.2 Mb format. For those members who cannot handle the 3.5 HD format we suggest that you buy the 3.5 format and get your mate who has a 3.5 HD drive to put it on 3.5 x 720 Kb or 5.25 x 1.2 Mb format.

Currently, I am negotiating with a company to appoint us as an agent for a wide range of IBM software and hardware and if successful should be able to offer our members a good range of products at very competitive prices. More on this as negotiations develop and if we are successful we would hope that our members would give favourable consideration to purchasing their requirements from our club, all else being equal.



We have also negotiated a good deal on 3.5 HD disks which has enabled us to reduce our price to \$10.00 per box of ten as from our next meeting. We are still trying to source a better price on the other disk formats but until we manage to get a better buying price there will be no change from our present pricing for these disks.

The following IBM disks will be available against firm orders as from our next meeting:

IBM 25	TI-IBM Emulator	\$5.00
IBM 26	PC Bench, PC Diagnostics	\$3.50
IBM 27	Blakestone 72.0	\$3.50
IBM 28	Raptor-Call of the shadows	\$5.00
IBM 29	DOOM 2 disk set	\$5.00

All above disks are 3.5 HD except for IBM 25 which is 3.5 x 720K.

Bye for now.

## SEPTEMBER SOFTWARE

By Larry Saunders

Diskname P039  
Used= 355 Free= 3  
Date September 1994

### Page Pro Pictures

BEE	10 I 13	BIRD1	25 I 13	BTRFLY	9 I 13
CONCH	9 I 13	COUGAR	25 I 13	COW1	12 I 13
COW2	3 I 13	DEER1	6 I 13	DEER2	7 I 13
DEER3	5 I 13	DOVE	27 I 13	DRAGNFLY	13 I 13
DUCK2	16 I 13	EAGLE	14 I 13	FISH	18 I 13
FOX1	26 I 13	FOX2	11 I 13	GRSHOPR1	14 I 13
GRSHOPR2	8 I 13	LION	22 I 13	MOTH1	4 I 13
MOTH2	5 I 13	OTTER	18 I 13	PENGUIN	8 I 13
SPIDER1	4 I 13	SPIDER2	10 I 13	SPIDER3	8 I 13
SPIDER4	8 I 13	TOUCAN	10 I 13		

Diskname P090  
Used= 344 Free= 14  
Date September 1994

8BALL	2 I 13	APPLE	3 I 13	AUSTRALIA	7 I 13
B-BALL	3 I 13	BALL	2 I 13	BANDAID	2 I 13
BARBER	3 I 13	BASKET	28 I 13	BEER	3 I 13
BELL	2 I 13	BIRDBATH	3 I 13	BMX	2 I 13
BOMB	2 I 13	BOOK1	4 I 13	BOOK2	2 I 13
BOOKS	2 I 13	BOW	2 I 13	BOWLING	2 I 13
BROOM	4 I 13	BULB	2 I 13	CALC2	2 I 13
CAMERA	5 I 13	CARDS	2 I 13	CASTLE	2 I 13
CHEESE	8 I 13	CHERRIES	26 I 13	CHESS	3 I 13
CHISEL	2 I 13	CHRISTIN	3 I 13	CIGARETTE	3 I 13
CLOCK1	2 I 13	CLOCK2	2 I 13	CLUB	2 I 13
COFFEE	3 I 13	COKE	2 I 13	COMB	3 I 13
CROSS	2 I 13	CUTTERS	3 I 13	DIAMOND	3 I 13
DIPLOMA	4 I 13	DONOT	4 I 13	EXERCISE	3 I 13
FARMER	3 I 13	FLEURDLI	2 I 13	FLOWER	3 I 13
GASPUMP	3 I 13	GLASSES	3 I 13	GLOBE	2 I 13
HAMMER	2 I 13	KEY1	2 I 13	KEY2	2 I 13
KNIFE	2 I 13	LAW	2 I 13	LEAF	2 I 13
LIGHTBULB	3 I 13	LIPS	3 I 13	LOOK	2 I 13
MAPLEAF	2 I 13	MATCHES	3 I 13	MEDAL	2 I 13
MNKYWRNC	3 I 13	MORSECODE	2 I 13	MSHRMS	3 I 13
PAGODA	2 I 13	PARADISE	3 I 13	PIN	2 I 13
PLANT	3 I 13	PLIERS	2 I 13	POINTER	2 I 13
POOL	2 I 13	ROSE	2 I 13	RTANGLE	4 I 13
SAW	3 I 13	SCISSORS	2 I 13	SCREW1	6 I 13
SCREW2	6 I 13	SCROLL	2 I 13	SCRWDRVR	2 I 13
SEWING	2 I 13	SHOES	3 I 13	SHOPPER	3 I 13
SKULL	2 I 13	SOCCERBALL	2 I 13	SPADE	2 I 13

**END OF ARTICLE**

## EDITORS COMMENTS

The attendance at the August meeting was in the 25 plus members. I would like to take this opportunity to say that it is wonderful to see some wives and children coming along, after all this is the year of the family.

For the IEM users Peter has some C.D. Roms for sale, so if you are interested please get in touch with him.

Percy has announced that there could be some old "AT" 286 monochrome computers for sale under \$100, in working order, with two drives, further information will come in our next meeting.

Ross also spoke briefly about his project on the LAN which he will be putting to use very shortly at one of his outings.

There also was mention of a Buy Sell and Swap day coming up soon, so get your old gear cleaned up and ready, don't forget start saving that money.

Please keep posted we will let you know the date soon

Please keep your articles coming in, WE STILL NEED MORE ARTICLES.

**END OF ARTICLE**

STAR 2 I 13 STARFISH 5 I 13 STOPWATCH 2 I 13  
 SWORD 2 I 13 TEDDY 8 I 13 TEX 3 I 13  
 THUMBSUP 4 I 13 TORCH 2 I 13 TREE 16 I 13  
 TREE2 2 I 13 TRIANGLE 3 I 13 TROPHY 2 I 13  
 TRUMPET 2 I 13 WATCH 4 I 13 WORLDMAP 3 I 13  
 WRENCH 2 I 13

Diskname A091  
 Used= 352 Free= 6  
 Date September 1994

TI-Artist Instances (small pictures)

CAR\_I 41 d 80 CATA\_I 4 d 80 CATB\_I 3 d 80  
 FIRE\_I 33 d 80 FOUR\_I 4 d 80 GAMBLER\_I 4 d 80  
 GASPCMP\_I 4 d 80 GOLF\_I 4 d 80 GRIMR\_I 3 d 80  
 HABERDASH\_I 4 d 80 HANDICAP\_I 4 d 80 HEART\_I 3 d 80  
 HELICOP\_I 4 d 80 INDUSTRY\_I 4 d 80 INK\_I 4 d 80  
 JACKO\_I 3 d 80 JET\_I 4 d 80 JUGGLER\_I 2 d 80  
 LADY\_I 4 d 80 LAW\_I 4 d 80 LOCK\_I 3 d 80  
 LOUNGE\_I 4 d 80 MECHANIC\_I 4 d 80 MANWOMN\_I 3 d 80  
 MANA\_I 3 d 80 MANB\_I 3 d 80 MANC\_I 3 d 80  
 MAND\_I 3 d 80 MAND\_I 3 d 80 MANF\_I 3 d 80  
 MANG\_I 3 d 80 MANH\_I 3 d 80 MANT\_I 3 d 80  
 MANJ\_I 3 d 80 MANK\_I 3 d 80 MANL\_I 3 d 80  
 MANM\_I 3 d 80 MANN\_I 3 d 80 MANO\_I 3 d 80  
 MANP\_I 3 d 80 MANQ\_I 3 d 80 MANU\_I 3 d 80  
 MANV\_I 3 d 80 MANW\_I 3 d 80 MANY\_I 3 d 80  
 MANY\_I 3 d 80 MARTINI\_I 4 d 80 MEETING\_I 3 d 80  
 NINJA\_I 3 d 80 NOSMOKE\_I 4 d 80 OLIVER\_I 3 d 80  
 PCKG\_I 3 d 80 PEACE\_I 4 d 80 PENCIL\_I 4 d 80  
 PEOPLE\_I 4 d 80 PHOTOGRAPHY\_I 4 d 80 PIANO\_I 4 d 80  
 PINS\_I 4 d 80 PLUMBING\_I 4 d 80 RECORDS\_I 4 d 80  
 SAILING\_I 4 d 80 SALES\_I 6 d 80 SHAVING\_I 4 d 80  
 SNOW\_I 4 d 80 SPEND\_I 4 d 80 STRTLAMP\_I 4 d 80  
 TEAPOT\_I 4 d 80 THERMOS\_I 4 d 80 THREE\_I 4 d 80  
 THUMSDN\_I 4 d 80 THUMBSUP\_I 4 d 80 THUMB\_I 10 d 80  
 TIME\_I 4 d 80 TRAVEL\_I 4 d 80 UMBRELLA\_I 4 d 80  
 VILLAIN\_I 3 d 80 WOMANA\_I 3 d 80 WOMANB\_I 3 d 80  
 WOMANC\_I 3 d 80

Diskname A092

TI-Artist Boarders

Boarders are easy to use, they load as a FONT  
 and are used as listed below:

- S = LEFT BOARDER
- D = RIGHT BOARDER
- E = TOP BOARDER
- X = BOTTOM BOARDER
- W = TOP LEFT CORNER BOARDER
- R = TOP RIGHT CORNER BOARDER
- Z = BOTTOM LEFT CORNER BOARDER
- C = BOTTOM RIGHT CORNER BOARDER

01\_F 8\*d 80 02\_F 8\*d 80 03\_F 8\*d 80 04\_F 8\*d 80  
 05\_F 8\*d 80 06\_F 8\*d 80 07\_F 8\*d 80 08\_F 8\*d 80

09\_F 8\*d 80 10\_F 8\*d 80 11\_F 7\*d 80 12\_F 8\*d 80  
 13\_F 8\*d 80 14\_F 8\*d 80 15\_F 8\*d 80 16\_F 7\*d 80  
 17\_F 8\*d 80 18\_F 7\*d 80 19\_F 8\*d 80 20\_F 8\*d 80  
 21\_F 7\*d 80 22\_F 7\*d 80 23\_F 7\*d 80 24\_F 7\*d 80  
 25\_F 8\*d 80 26\_F 8\*d 80 27\_F 7\*d 80 28\_F 8\*d 80  
 29\_F 8\*d 80 30\_F 8\*d 80 31\_F 8\*d 80 32\_F 7\*d 80  
 33\_F 8\*d 80 34\_F 8\*d 80 35\_F 8\*d 80 36\_F 8\*d 80  
 37\_F 8\*d 80 38\_F 7\*d 80 39\_F 8\*d 80 40\_F 8\*d 80  
 41\_F 8\*d 80 42\_F 8\*d 80 43\_F 8\*d 80 44\_F 7\*d 80  
 45\_F 8\*d 80

**END OF ARTICLE**

Techo Time

from Geoff Trott

Installing the 80 Column System

As you are all aware, we are starting to put together 80 column card systems. These consist of two printed circuit boards, designed to plug into sockets on the console mother board. Their installation is quite easy but I will go through it step by step, so that anyone should be able to do it themselves. Take a console and turn it upside down. There are seven (7) Phillips head screws to undo, four at the keyboard or front edge and three at the back or power cable input edge. With these screws removed, the bottom half of the plastic case can be removed. Take care to keep the screws together, particularly the three at the back which are in deep recesses. With the bottom of the case removed you can see the three circuit boards inside. The mother board is at the back and covered in a tin casing. The keyboard is under the keys and the power supply is next to the keyboard with a cable running over the tin case to its hole in the plastic case at the back. Remove the power socket from its hole at the back and carefully free the wires from the tape holding them onto the metal case. You may want to use this tape when assembling again. Then undo the two screws holding the power supply board down and gently lift it until you can remove the plug under this board from its socket. You can then take the power supply board out of the case and lay it aside. Undo the three screws holding the mother board down, one in the corner closest to the power supply board, one diagonally opposite that in the far corner, and the third through a hole in the metal case, close to the centre of the board. You can now carefully raise the board up until you can see where the keyboard plugs into the mother board, next to the middle of the keyboard. With a small flat bladed screwdriver, ease this plug away from the socket (or socket away from the plug) and the mother board can be lifted out of the plastic case. The cartridge port plug assembly can cause difficulty sometimes.

With these two boards out of the plastic case, you can place the case with keyboard aside and examine the mother board in its tin casing. This will have three screws with nuts holding the two sides of the tin case onto the circuit board. There will also be the cartridge port plug assembly sticking out of the top side. Take this assembly out of its socket and place it nearby. On the top side you will also notice two small screws through the metal case at the other end away from the cartridge port. These attach the metal cover to the heatsink metal on top of the VDP processor. I suggest you remove both of these screws by loosening them both before taking either one out. On some black consoles there will be another little screw on top near the keyboard plug. I suggest you undo that as well but try and hold the metal underneath from turning with another small screw driver through one of the holes nearby. Then undo the three screws and nuts around the edge of the metal case and take off the two metal spring clips. This should allow the top metal case to come off and perhaps the bottom as well, depending on whether it has been soldered or not. The bottom does not need to come off and in fact it would be just as well to put two of the screws and nuts back in straight away. The two I suggest are the one next to the IO port at the side of the console (the short screw) and the one next to the joystick socket. This one will have the nut sitting on the top of the plastic of the joystick socket. The third one could also be put in if you put an insulating washer on the top. The metal top is going to be discarded, although it could be cut to fit the additions after they have been installed and then re-fastened using the screws and nuts. Now you are up to the interesting part.

Make haste slowly is a good motto to follow, I believe. I suggest you now check that the system still works by taking the mother board and connecting your video connector to it (with your normal monitor connection) and the power supply board. Connect the transformer lead to the power supply socket, make sure that everything is connected and nothing touching that should not be touching and turn the console on. You should get the colour bar screen and the beep. Not much more can be done without the keyboard, but you at least know that everything still works at this time. Now locate the three GROM chips in sockets at right angles to the processor (the big IC in the middle) and labelled with the numbers 2155, 2156, 2157 and some letters. There is a fourth chip next to them also in a socket which is the sound generator. The three GROM chips can be inserted in any order in the first three sockets. Note which pin is pin 1. Take out the 2155 and 2156 GROMs, leaving in the 2157 GROM. Take the SOB board, which should have a flying lead, and solder the lead to a convenient and adjacent ground. All around the edge

of the mother board is ground. Plug the SOB board into the centre of the three sockets (second from the left) with the bulk of the board overhanging the processor and the empty GROM socket (the left one). Now turn on the power again and you should see the new colour bar screen. If you do, go to the next paragraph. If you do not, unplug the SOB and put back in the 2155 GROM and try again (the 2156 is only needed for BASIC). If the console works with the GROMs but not with the SOB you need help.

Now remove the VDP processor with its metal heat sink sitting on top of it. The 80 column card plugs into the socket but has one lead to be attached to the mother board. This goes to pin 25 of the 9901 (A13) and should be attached very carefully. Pin 25 is the fifth pin counting from the edge of the board down the side closest to the VDP processor socket. Unfortunately there is nothing other than the pad that the pin of the 9901 goes through to solder to, so you must be careful here. (It is a bit easier to solder this wire to the bottom of the board but then you have to provide a path for it and take off the bottom metal case.) Once the lead is soldered, this board can be plugged in so that it also heads towards the processor IC and its 9 pin connector overhangs the edge of the board. You can now plug your monitor directly into the 9 pin connector and turn on the console to test it. (The 9 pin connector has the following connections: pin 1 is ground, pin 3 is red, pin 4 is green, pin 5 is blue, pin 8 is composite sync.) With the SOB board in and working you will see the same colour bar screen as in the previous paragraph but probably with a bit more red in the colours. You will need to adjust your monitor if this is a problem. If you get a mainly black picture with no vertical synchronisation, you probably need to remove the inverter in the sync line inside the monitor. Consult the section on monitors for more information. If the SOB board is not installed, you will see a meaningless pattern, probably in two colours. The SOB board is needed to initialise the 9958 video processor correctly. If all is well, now you need to make a neat hole in the top part of the plastic case for the 9 pin connector using a sharp knife (like a Stanley knife). This was (in my case) 105 mm from the nearest edge, 31 mm wide and 13 mm high. A neat rectangular hole in the correct place will provide mechanical support for the monitor plug. The board was designed so that the plug would just be flush with the plastic case.

Once you are happy that all is working, re-assembly is the reverse process. Insert the cartridge port connector circuit board into its socket in the mother board the correct way round. Carefully put the motherboard back into the top part of the plastic case, making sure that the keyboard connector is in place, the cartridge connector goes into its slots and the 9 pin

connector slides easily into the hole you have made for it. Trim this hole if necessary. With the motherboard in place, check that the two wires from the circuit boards are not visible through the holes in the mother board, or in the way. If they are, move them out of the way, bending them if necessary. Then put in the three mounting screws through the mother board. Now attach the power cable from the mother board to the power supply and put the power supply circuit board in place and attach it with its two screws. Make sure that the plastic slide switch engages with the switch on the power supply circuit board. Finally replace the bottom of the plastic case, making sure that there are no wires in its way, and do up the seven screws. It should all go back together neatly, but it depends on how neatly you have made the hole for the 9 pin connector.

### Making the circuit boards

Please read carefully both of the next two paragraphs before starting to assemble components into the printed circuit boards and make sure you understand exactly what you are doing before you start. Mistakes are difficult to correct and words can have different meanings for different people. A small delay to ask questions is better than a long delay to fix a major error, apart from any possible expense of repairs. You will also need a soldering iron with a fine tip and some small diameter multi-core solder, along with some skill at soldering. This should not be done by a beginner.

The installation above assumes that you have the two boards already made up. Here are a few instructions for those who are starting from scratch for installing the components into the boards. I will assume that you have a component overlay to follow which will show you which way round the components go. The square pad is pin 1 for ICs. For the 80 column card, install the 9958 first. This is not easy because of the number of pins that must be inserted all at once. It is best to bend the pins in a bit until they line up at the correct spacing and then make sure that there are no pins bent unduly. The 74LS90 can be installed next followed by the 6 memory chips. With all these ICs, make sure that they are correctly oriented and do not push them too far through the board as they can interfere with components underneath them when plugged in. A good way to do this is to solder two pins on each IC at opposite ends of the IC first. By applying heat to these pins one at a time the position of the IC can be adjusted and then the rest of the pins can be soldered. With plated through holes it is not necessary for the pins to go through the board past the board surface. Then insert all the bypass capacitors (marked X) and trim their leads. Next do the crystal, resistors, inductors, transistors, and other capacitors, making sure polarity is correct and trimming as you go. Attach a wire 5 cm long to the top of the board and prepare the other end for soldering. Insert

the 9 pin connector and solder the pins used and the attachment lugs. Finally, insert the two rows of 20 square pins from the bottom of the board and solder the end pins of each row. Carefully adjust the position of the pins so they have a maximum length out the bottom of the board (do not poke through the top of the board) and are the correct distance apart where they have to plug into the socket on the mother board. Be extra careful with this as it is extremely difficult to adjust after you have soldered all the pins. Once you have lined the pins up, solder all of them.

The SOB board only has a few components to insert but unfortunately has some corrections to be made to the circuit. These consist of wires to be added which should be done before anything else is soldered on. If thin wires (wire wrap) are used they can be inserted into the holes with the IC or socket leads. The wires go from pin 21 of EMCR0M2 to pin 22 of EPROM; pin 20 to pin 14 of EPROM; and pin 1 to pin 28 to pin 27 of EPROM. A socket should be installed for the EPROM, once again not pushed all the way down to the board. The resistor (2.7 kohms) should be installed next followed by the PAL (GAL) ICs in their correct positions. The capacitors are next followed by the wire of about 6 cms long. Finally the two rows of 8 round pins are inserted in the bottom of the board taking care to get them straight and as long as possible, as with the 80 column board square pins.

Please read carefully both of the last two paragraphs before starting and make sure you understand exactly what you are doing before you start. Mistakes are difficult to correct and words can have different meanings for different people. A small delay to ask questions is better than a long delay to fix a major error, apart from any possible extra expense which may be involved.

### Monitors

To use the 80 column system, you will need a monitor. This needs to be an analog monitor, like the ones used by the Amiga. The Wang monitors we managed to get recently are also suitable. I am using Wang monitors and also another one I picked up which was designed for use with a Cronenco colour system. Basically, the monitor must respond to the 3 colour signals (red, blue and green) in the voltage range of 0 to 1 volts at an impedance level of 100 ohms. It must also have a composite sync input where a mixture of horizontal and vertical sync are fed in. The horizontal frequency is about 12 kHz. If you use an Amiga monitor, there should be no problems. If you use a Wang monitor, the sync signal will probably be the wrong polarity. Certainly the later models are wrong while the very earliest ones are fine. What I have done and so what I





# LEARN TO KNOW YOUR TI

## LESSON 19

with Percy Harrison

This lesson concerns the DATA statement. You put data into the DATA statement at the time you write the program. READ gets data from the DATA statements and RESTORE puts the pointer back to the beginning of a DATA statement.

The storing of DATA statements has a few confusing aspects when first confronted. It must be read in order, starting from the beginning. In TI BASIC you can skip data by arranging it in different DATA statements, and pointing to the one you want with a RESTORE nnn statement, where nnn is the number of the DATA statement line. The idea of the "pointer" is used in this lesson.

Using DATA saves some error prone typing if you have a lot of data. However, it is also useful in cases where there is not really very much data because it clearly separates the actual data from the processing of the data. This helps when debugging programs.

### LESSON 19 DATA, READ, AND RESTORE

#### TWO KINDS OF DATA

There are two kinds of data in your programming:

1. The data you INPCT or get by CALL KEY through the keyboard.

```
10 REM FIRST KIND OF DATA
20 CALL CLEAR
30 PRINT "YOUR PET PEEVE"
40 INPUT PS
50 CALL CLEAR
60 PRINT "REALLY!"
70 PRINT "YOU DON'T LIKE ";
80 PRINT PS;"?"
```

In this program PS is data entered by the user as the program runs.

2. The data which is stored in the program at the time it is written.

```
10 REM THE SECOND KIND OF DATA
20 CALL CLEAR
30 Y=2
40 Y=3
50 PRINT X:Y;X*Y
```

In this program X and Y are data stored in the program by the programmer when he or she wrote the program. (How's that for non-sexism?).

#### STORING LOTS OF DATA

It is OK to store small amounts of data in LET statements (ie example 1 above) but it is awkward to store large amounts of data that way.

Use the DATA statement to store large amounts of data and then use the READ statement to retrieve the data from the DATA statement.

```
10 REM LOTS OF DATA
20 CALL CLEAR
30 DATA SUNDAY,MONDAY,TUESDAY,WEDNESDAY,THURSDAY
,FRIDAY,SATURDAY
40 READ D1$,D2$,D3$,D4$
50 PRINT D1$,D2$
```

After the program runs, box D1\$ holds the first item in the DATA list (SUNDAY) and box D2\$ holds the second (MONDAY), etc.

#### STRANGE RULES

1. It doesn't matter where the DATA statement is in the program.

Do this: Change line number 30 in the above program to line number 90. Run the program. It works just the same.

2. It doesn't matter how many DATA statements there are.

Do this: Break the DATA statement into two:

```
90 DATA SUNDAY,MONDAY,TUESDAY
91 DATA WEDNESDAY,THURSDAY,FRIDAY,SATURDAY
```

Run the program. It works just the same as before.

#### IT IS POLITE TO POINT

READ uses a pointer. It always points to the next item to be read.

You can't see the pointer. Just imagine it is there.

When the program starts, the READ pointer points to the first item in the first DATA statement in the program. (That is, the DATA statement with the lowest line number of all DATA statements in the program.)

Each time the program executes a READ command, the pointer moves to the next item in the DATA list.

If the pointer gets to the end of the DATA statement, it automatically goes to the next DATA statement. (That is, to the DATA statement with the next higher line number.)

It doesn't matter if there are a lot of lines between the DATA statements.

Do this: Change line 90 back to line 30. (Leave line 91 alone).

```
30 DATA SUNDAY,MONDAY,TUESDAY
```

```
91 DATA WEDNESDAY,THURSDAY,FRIDAY,SATURDAY
```

Run the program. It works just the same.

#### FALLING OFF THE END OF THE PLANK

When the pointer reaches the last item in the last DATA statement in the program, there are no more items to read. If you try to READ again, you will see an error message:

```
DATA ERROR
```

```
or
```

```
DATA ERROR IN nnn
```

where nnn is a DATA line number.

#### BACK TO SQUARE ONE

At any point in the program, you have only three choices for the READ pointer.

1. You can do another READ: Then the pointer moves ahead one item.
2. You can command RESTORE: Then the READ pointer is put back to the beginning of the first DATA statement in the program.
3. You can command RESTORE nnn: The nnn is a line

number of a DATA statement. The READ pointer is put on the first item in that DATA statement.

#### MIXTURES OF DATA

The DATA statement can hold strings or numbers in any order but you must be careful in your READ command to have the correct kind of variable to match the kind of data.

```
Correct:  70 READ 77,FUZZ
          75 READ N
          80 READ BS
```

```
Wrong:   70 DATA 77,FUZZ
          75 READ BS      OK, BS box holds "77"
          80 READ N      Type MISMATCH ERROR
```

You can't put "FUZZ" into a number box.

#### Assignment 19:

1. Write a program naming your relatives. When you ask the computer "UNCLE" it gives the name of your uncles. DATA statements will have pairs of items. The first item is a relation like FATHER or COUSIN. The second item is a person's name. Of course, you may have several brothers, for example, each with a DATA statement.

#### ANSWERS TO LESSON 18

##### Assignment Question 18-1

In the command mode the cursor is waiting for an input from the programmer.

##### Assignment Question 18-2

In the run mode the screen turns green and the program in memory runs.

##### Assignment Question 18-3

When the program finishes running the computer returns to the command mode providing the program does not contain a continuous loop in which case the program will continue to run until the operator presses the FCTN and 4 (CLEAR) keys.

## Assignment Question 18-4

The character typed will be positioned on the screen at the location of the cursor prompt and the prompt will move one character to the right.

Next month we will fiddle around with the SOUND command so that you will get an appreciation of the ability of your machine to produce a wide range of pleasant tones and also some very noisy ones.

Bye for now.

**END OF ARTICLE**

## Hello BBS Users.

By Ross Mudie

Firstly, my apologies for the lack of file and program changes. 1994 has turned into a very busy year for me, but at least I have managed to do an update today.

1994 started out with some involvement in bush fires radio communications. The bush fires also caused numerous operational problems with the BBS due to the incessant power dips.

Next I was involved in the Central Coast Amateur Radio Club field day at Wyong in February.

In March I commenced working on a small Local Area Network (LAN) using TI99/4A's for the Shahzada Endurance Horse ride event, which I have become involved in each August. The LAN uses a TI99/4A, PE Box and console, 2 x RS232 cards, RAM disk, 32K memory Triple Tech. This project is coming together quite well (as seen at the April meeting). The main areas of concern are getting all of the terminals (4 TI's with various hardware) up and running in time, with some of the hardware modifications that will be required to give sufficient reliability. The LAN will make an interesting article in the future. Work on the LAN and its 4 terminals both hardware and software are still continuing.

I travelled to New Zealand to run a Fax training course in April and managed to take a 1 week holiday in the NZ South Island while I was there. Whilst in Auckland I picked up a Philips PTS 6000 ex-banking terminal which contains a tiny 13cm B/W monochrome screen. An interface has been developed to use the monitor on the LAN TI99/4A. (Another interesting article when time permits). (The PTS 6000 cost me NZ\$10 (AU\$8) which was quite a bargain considering it actually worked).

I did a large Public Address for a school fete early May and another PA for a school cross country day just 2 weeks after the fete.

Still in May, running into June, I ran a total of 8 Fax training courses over a period of 11 working days in Melbourne, Hobart and Launceston.

When I manage to get into the normal work place, I just go flat out because of the build up of problems involving Fax communications and the attempts to organise the next round of training courses.

I will be continuing on preparations for the other events in the weekend 25-26 June, its a 80km endurance ride (PA, radio conns, Event Computer the TI of course).

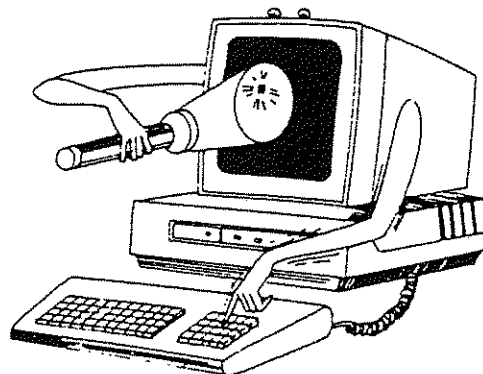
I am off to Adelaide to run more Fax training courses on 7th July and then its panic stations in serious style to get everything finalised and working for the Shahzada at St Albans. I start at St Albans 17th August, setting up PA, the TI99/4A LAN, some of the radio communications and what ever else! If anyone wants a day outing in the week 22nd to 26th August to watch the grass grow at the endurance ride and see if the little LAN does the job or not, then drive up to st Albans for the day. You can't miss the event once you drive into the "town". (The town is that small!)

Its all got to slow down sometime, don't quite know when! At least I have managed to put some time in on the BBS this weekend, I hope it won't be so long until I change the programs and files again.

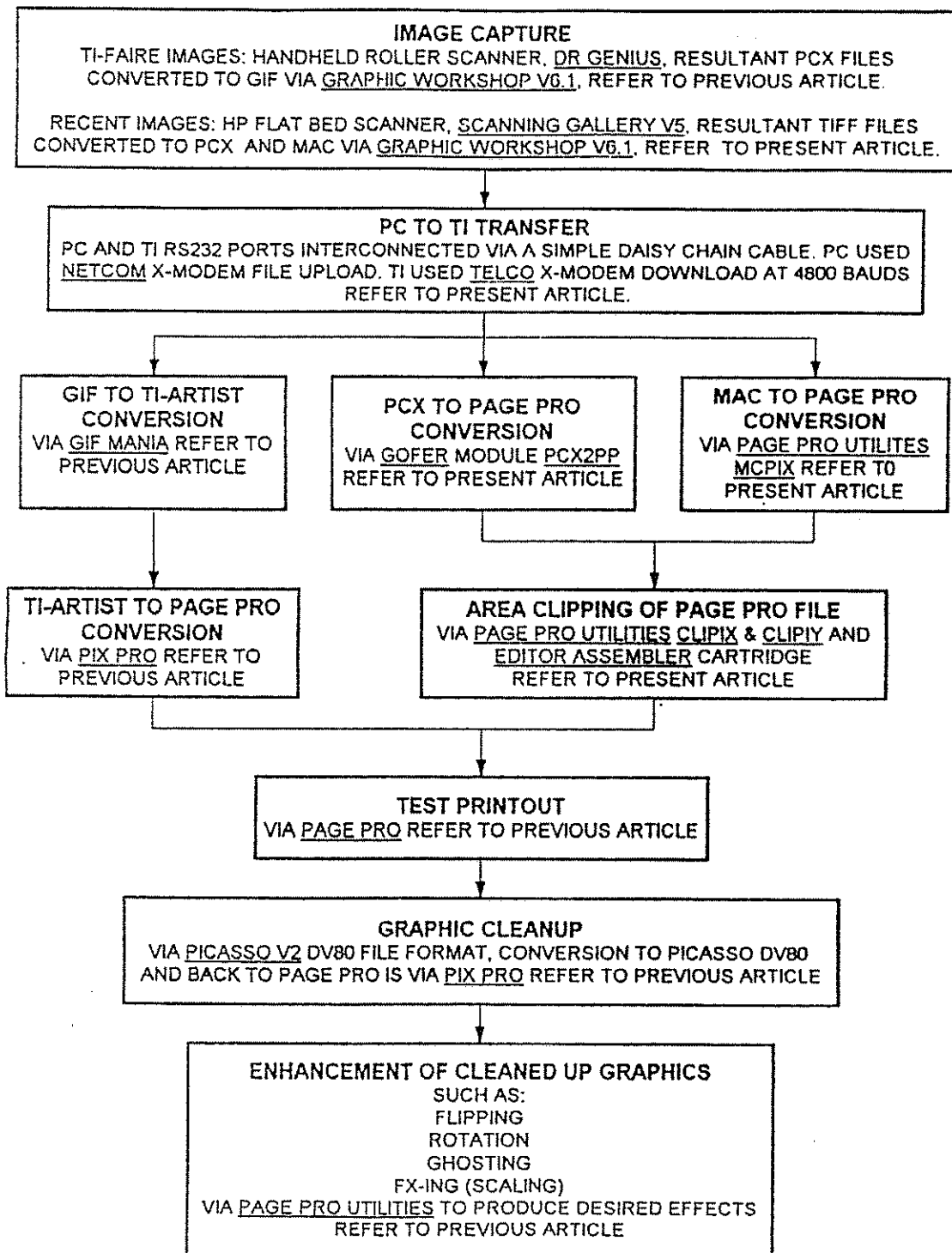
Look forward to seeing all at the July meeting, (I missed the May and June meetings with the fete and being in Tasmania).

Regards...Ross

**END OF ARTICLE**



# PC TO PAGE PRO CONVERSION REVISITED



NOTE 1: PROGRAMS USED THROUGHOUT THE PROCESS ARE IDENTIFIED BY AN UNDERLINE.  
NOTE 2: THE PREVIOUS ARTICLE REFERENCE IS TO "GIF TO PAGE PRO CONVERSIONS" THAT  
WAS PRINTED IN THE TISHUG NEWS DIGEST OF APRIL 1993.

# PC TO PAGE PRO CONVERSION REVISITED

by Alf Ruggeri

Well here we go again my fifth attempt at an informative precis on TI99/4A graphics. In this article, I propose to:

1. Further clarify my 'GIF TO PAGE PRO CONVERSIONS' process.
2. Rectify one of my printed blunders from the above exercise.
3. Share a thought provoking question.
4. Explore more graphic gateways via:
  - a. GOPER
  - b. MCPIX
  - c. CLIPIX
5. Find another use for FAX machines.

## WHY REVISIT GRAPHICS

It may seem that graphics is the only topic that I can write about. Why graphics and not some other subject. After all in the eleven years since my children first found the TI under our Christmas tree, along with the rest of their presents, games and educational programs, too numerous to remember, have been keyed in and enjoyed on the humble beast.

But time marches on and my children are now adults. It is now time for a little self indulgence by the not so old man. Some, my wife included, may think that the word little is perhaps an understatement, but at least it keeps my vices minimized, and me, at home.

The topics of games and education are more expertly handled by those more motivated in those areas.

Perhaps my attraction to graphics is a reflection of my 26 year involvement with electronics and mechanical design drafting, some occasional dabbling in the graphic arts, but I suppose closest to the truth, an incurable propensity to wax verbose through the aspirations of a frustrated artist.

## THIS ARTICLE'S MOTIVATION

The feedback which forms the motivation for the present article has recently been forthcoming from Eric Okenden and Herbert Schade of TISHUG, and Geoff Warner of TIUP. The queries and comments made by these fellow TI users will be discussed as the article proceeds. Thank you gentlemen for your much appreciated interest and support.

## BACK TO GIF MANIA

It is now almost a year and a half since I wrote my 'GIF TO PAGE PRO CONVERSION' article, and almost two years since the event for which that article served as documentation i.e. my preparations for our 1992 TI-FAIRE. Given the detail depth of the article and the lengthy tutorials presented since, I would have thought that I had clarified all aspects of the topic.

Yet as recently as last June's TISHUG meeting more details on the conversion process were sought. Eric Okenden was very interested in determining more clearly what programs the process employed, and the order in which they were used.

Eric's request was reasonable enough, as it is not hard to lose track of procedural flow whilst trying to maintain objectivity in writing a lengthy article.

Therefore I decided that the process could be further clarified by way of a flowchart. The flowchart idea came in part, from Bob Relyea's 'PAGE PRO CONNECTIVITY CHART' that was published on page 6 in the TISHUG NEWS DIGEST of April 1992. For serious TI users of graphics, Bob's article is an excellent source of information and well worthwhile re-reading.

With my flowchart, the progress of the GIF MANIA method, when read with notes 1 and 2 should be reasonably straight forward.

There are two other parallel conversion methods identified on the flowchart. Their significance will be dealt with in depth further on in this article.

## A BLUNDER IN 'GIF TO PAGE PRO CONVERSIONS'

Unfortunately an error found its way into my April 1993 article, not just a typographical one, there is certainly no shortage of those, but shock, horror, a procedural one!

A STANDARD NULL MODEM cable was stated as having been used in the interconnection between the PC and TI99/4A RS232 ports, this was definitely NOT SO!. Instead an ordinary 'DAISY CHAIN' (nothing do with flowers) connection cable, i.e. RS232 pin per pin equivalency, was used.

By way of explanation, a STANDARD NULL MODEM cable is used to interconnect either two PC's or two TI99/4A's. But not a PC and a TI. The reason being, is that the SEND and RECEIVE lines of the adjacent computers have to be reversed for communication to take place, and it is this line reversal that the STANDARD NULL MODEM configuration performs.



For reasons known only to the TI's designers, the TI's SEND and RECEIVE lines are already reversed in respect to PC's. Perhaps at the time of the TI's design, the PC RS232 line configuration was not an established industry standard, or perhaps with cynical conjecture on my part, the TI's designers simply decided to do their own thing.

In any case, the error in my article was pointed out to the TISHUG members that were present at my tutorials, but since part of this current article covers the same ground, I feel it is necessary to set the record straight in print.

For further information on this topic, I recommend that you read Rolf Schreiber's 'GIF FILE TRANSFER FROM PC TO TI99/4A' that was printed in the TISHUG NEWS DIGEST of March 1992. After all, it was only through the benefit of this article by Rolf and Geoff Trott, that I was able to pry open the previously locked doorway between the TI99/4A and the PC.

#### A THOUGHT PROVOKING QUESTION

Readers of my April 1993 article, and the TISHUG members present at my subsequent tutorials, will possibly remember an appeal that I made (because of GIF MANIA's lengthy conversion procedure) for information on any alternative non 80 column GIF viewer/converter with which the TI99/4A community may have been familiar. To this day no reply has come to that appeal, perhaps there is no such beast.

However, in the process of finding an answer to a fellow TISHUG member's question on graphics, I literally stumbled over not just one, but two, considerably less procedure intensive methods of PC to TI graphics conversion.

At last year's August TISHUG meeting, Herbert Schade confronted me with a most thought provoking question. Herbert's question concerned some loading problems he was experiencing with a program called GOFER. This program Version 1.0, was prepared by Dan Gazy in 1991 and was distributed by ASGARD.

The attempt to find an answer led me down some very exciting yet bewildering byways. Should I relate only a very condensed account of the situation that unfolded, even the mere pretense of maintaining objectivity in this article, will very rapidly vanish.

The truly irritating aspect of the search, was the fact, that I had the relevant programs in my possession in excess of a year, before the events that followed the August 1993 meeting.

It is sufficient to say, that thanks to Herbert's question, I was able to identify two more graphic gateways.

The two graphic gateways are GOFER and MCPIX and connect to PAGE PRO via CLIPIX.

#### USING GOFER

Whilst it is not essential to have a ram disk it will certainly speed up the conversion process. In my application I loaded the PCX file, 887 sectors, into a ram disk partition of 990 sectors, and prepared another partition of 1438 sectors to receive the converted PAGE PRO file.

1. GOFER is operated in floppy drive 1 via the disk's LOAD file.

2. On appearance of the initial GOFER screen the Q key is pressed to activate the GOFER main menu. There appear to be some excellent conversion options on this menu, but considering this article's topic, there is insufficient time to do them justice.

3. The highlighting bar, initially at the top of the menu, is moved to the bottom option i.e. Load Additional Modules via the X key.

4. The Q key is pressed to activate the selection.

5. A small window appears Enter Filename, type in DSK1.PCX2PP and press <ENTER>. The GOFER program can be configured, if required, so that modules such as PCX2PP, will load up as selectable options by the use of the disk supplied utility CUSTOMIZE.

6. A new window appears enquiring in which drives (DSK1. to DSK9.), the PCX files are stored. Select the PCX source drive via the X key. Confirm the selection with the Q key.

7. A new window appears identifying the PCX file content of the source drive.

8. The source file is selected with the S key and the filename for PAGE PRO format is displayed in the top

RES corner of the screen, ready to be modified. If the PAGE PRO file is to be written to the same drive as that which contains the PCX file it will then be necessary to alter the filename, but as in this case, where there is a separate destination drive, it can be left as is. If required several PCX files can be selected for sequential conversion, viz batch file process.

9. Press <ENTER> to accept the default or altered PAGE PRO filename.

10. Press the Q key to bring up the list of destination drives. Make the selection as per step 6.

Now the conversion routine zooms into action at lightning speed. A new window appears and identifies the following data available from the PCX file header and responses to previous prompts:

a/ Number of files to convert.

b/ The source path and filename.

c/ The version of PC PAINTBRUSH with which the PCX file conforms, the pixel width and height dimensions of the PCX, the type: MONO.

GOFER/PCX2PP will only accept black and white images. This is not really a problem but a time saving advantage, as the converted image will not require colour DITHERING as per GIF MANIA, and furthermore PAGE PRO will not output in colour in any case.

d/ The destination path and filename.

e/ The ROWS (height) and COLUMNS (width) dimensions of the PAGE PRO file.

f/ A conversion status line which alternates between READING PCX DATA and WRITING PP ROW number.

g/ At the bottom of the window is an ERRORS indicator which will signal conversion problems.

h/ On completion of the conversion process, the source drive window will again be displayed. If BATCH conversion had been chosen in step 8, conversion of the subsequent files would have taken place.

11. Select the EXIT option (default) and press the Q key to confirm selection.

12. The GOFER main menu reappears, as in steps 3 and 4, select the second last option EXIT TO TITLE SCREEN and exit the program.

The converted PAGE PRO file, in INTERNAL 13 format, 953 sectors, is larger than the source PCX file of 387 sectors. Failure to provide the additional space on the destination drive will cause the conversion process to register an error count as per step 10/g.

#### AVAILABILITY OF GOFER

The down side of GOFER is that its population in our community is on the endangered species list, very rare indeed. Not too long after GOFER's release, ASGARD ceased communications with its long standing clients. Perhaps they have ceased trading. If so it is a most lamentable loss to the already dwindling market of quality TI99/4A products.

For those seeking more information on GOFER, I can only suggest that you contact the program's author: Dan Gassy, 22 6th Street, Sayerville, NJ, USA, 08872-1313. The address was obtained from one of the GOFER disk's documentation files, I cannot vouch that it is Dan's current address, but it is better than nothing.

#### USING MCPIX V1.01

As per the GOFER conversion, ram disks, if available, are preferable to floppy drives.

1. The MCPIX file in the PAGE PRO UTILITIES program is operated directly from floppy drive 1. There appears to be a BAD ARGUMENT problem, at least on my copy, when booted up via the disk's LOAD file.

2. The second option, CONVERT MAC TO PAGE PRO is chosen from the McPIX V1.01 screen.

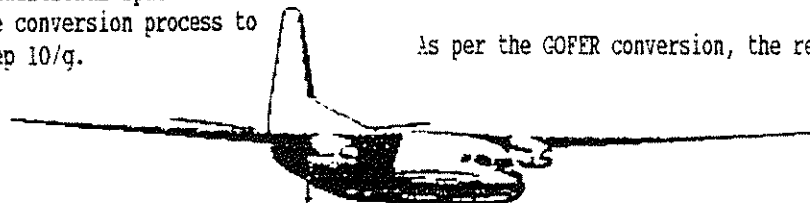
3. The Mac file? source path and filename prompt is displayed and the appropriate information is typed in and <ENTER>.

4. The Page Pro file? destination path and filename prompt is displayed and the appropriate information is typed in and <ENTER>. Keep in mind the caution of destination path and filename of the GOFER conversion step 8.

5. A SCANNING message, followed by a PROCESSING... message is all that the MAC conversion process will display as it happily churns into action. Unlike GOFER, it will not present MAC file header data and status or error reports, but it carries out its task just as efficiently.

6. At the end of the conversion, there is no batch file option, the McPIX V1.01 screen is redisplayed. Press function <QUIT> to terminate the program.

As per the GOFER conversion, the resultant PAGE PRO



file, in INTERNAL 13 format, 219 sectors, is considerably larger than the original MAC file of 160 sectors. Although MCP1X might not generate an error count, EXTENDED BASIC will certainly deliver an I/O infringement notice.

#### VIEWING CONVERTED PCX AND MAC FILES

PAGE PRO will load and display both converted files, but only that portion, that corresponds to the top LHS 60 column by 66 rows PAGE PRO page area. PIX PRO is of no use in retrieving the overhanging horizontal and vertical portions. In fact in this application, PIX PRO, serves no purpose at all. Instead, CLIPIX, yet another program by Dan Gazy, again from the PAGE PRO UTILITIES disk will have to be used. You will have to beg, borrow, or otherwise acquire an EDITOR / ASSEMBLER cartridge, unless you already have one, as this program definitely requires its use.

#### USING CLIPIX

1. Place the E/A cartridge in the cartridge port, turn on the PE box, turn on the console.
2. Place the disk containing CLIPIX and CLIPIY in floppy drive 1, and select EDITOR / ASSEMBLER from the master menu.
3. Select option 5, LOAD AND RUN.
4. Type in DSK1.CLIPIX and <ENTER>.
5. The program will load and run.
6. A graphic title screen will be displayed, press any key to continue.
7. A split screen similar in appearance to the normal PAGE PRO screen will be presented. On the bottom LHS is an input request In File:\_, (path and filename of converted file). At the bottom RHS are the vertical and horizontal location co-ordinate markers ROW and COL.

At this point, if you have forgotten what path and filename your converted file lives under, press <ENTER> and Dan Gazy's ALTERNATE menu will appear:

- 1st option - LOAD ANOTHER PROGRAM
- 2nd option - QUIT TO TITLE SCREEN
- 3rd option - RETURN TO CLIPIY
- 4th option - CATALOG DISK

Activate the 4th option to locate the converted file. Once located, press any key twice to return to the ALTERNATE menu. Select the 3rd option to return to

the split screen.

8. Type in the path and filename at the In File request, within seconds, (very very fast) the file is loaded in and displayed. Only the amount of picture area normally viewable through the PAGE PRO screen is visible at any time, but the ROW and COL markers indicate the full picture area dimensions.

Under the In File and path/filename, a new label, Cursor Position, with corresponding co-ordinates of 1 and 1 under the ROW and COL dimensions have been added. This label and the co-ordinates refer to the location of a light green transparent cursor located at the top LHS corner of the picture viewing area. As expected, the screen area of this cursor is 8x12 pixels, i.e. one PAGE PRO character element.

The location of the cursor can be moved via the arrow keys. Regrettably the arrow keys are not auto repeating in this program, but the cursor can be moved in increments of four positions, by pressing the arrow keys and the FCTN key simultaneously, or increments of eight positions by using the arrow keys and the CTRL key simultaneously.

9. Okay, so what function does the cursor perform? As the program's name CLIPIX implies, this is a picture clipping program, and the cursor's function is to frame the area, of the loaded image file that requires clipping.

By simple example:

a/ If the top LHS position (default) corresponds with the top LHS corner of the area you wish to clip.

b/ Press the Q key, and yet another label LEFT CLIP and ROW/COL co-ordinates of 1/1, appear, to identify the top LHS clipping anchor point.

c/ Now move the cursor to ROW/COL co-ordinates of 10/10, the area that is bound, 10x10 units.

d/ Press the Q key again and another label RIGHT CLIP with ROW/COL co-ordinates of 10/10 appear identifying the bottom RHS clipping anchor point.

e/ The clipped area is now ready to be filed away at the Out File prompt. Type in the destination path and filename.

f/ After the clipped file is saved away, a Continue to Clip File? prompt is displayed. If further clipping is required, type in Y and <ENTER> and proceed with steps 9/a to 9/f. Pressing N and <ENTER> returns the program to the split screen.

This reclipping feature is definitely a time saving boon, as the entire image file does not have to be reloaded, in order to obtain a further clip. .

10. To exit the program, press <ENTER> to invoke the ALTERNATE menu and choose the second option.  
WHY USE CLIPIX ?

The example of step 9 was purposely kept simple in order to demonstrate CLIPIX's similarity to PAGE PRO's normal clipping facility via the use of the NEWPICTURE feature.

CLIPX's real strength is in being able to clip areas that extend beyond the borders of the PAGE PRO page.

Some advanced examples are:

(i) To clip the image area, to the right of the normal PAGE PRO page, set the LEFT CLIP anchor point to ROW/COL 1/61 and the RIGHT CLIP to ROW/COL 66/120.

(ii) To clip the image area, that lies below the normal PAGE PRO page, set the LEFT CLIP anchor point to ROW/COL 67/1 and the RIGHT CLIP anchor point to ROW/COL 132/60.

These two examples are presented only to demonstrate some of the advanced possibilities. The settings of the LEFT and RIGHT CLIPS is determined by the user's need, and the overall dimensions of the converted file.

Areas wider or taller than the PAGE PRO page can, be clipped and then reduced (to fit the PAGE PRO page borders) via the PAGE PRO Utilities FX program. This will be the situation, where part of scanned images, because of the scanning rate selected, horizontally or vertically overhang the PAGE PRO borders.

As mentioned earlier, the benefit of importing PCX and MAC pictures into PAGE PRO, can only be realized through the use of Dan Gazy's very elegant CLIPIX.

#### TIFF, GIF, PCX, MAC FORMATS

The image that was used as the test piece in the PC to TI transfer and GIF, PCX, MAC conversion to PAGE PRO, started out as an A4 sized picture that was scanned on a HP flatbed scanner, using SCANNING GALLERY V5. The scanning rate was set to 75 DPI to approximate PAGE PRO's hardcopy resolution of 60 DPI. The default output file format was TIFF.

The TIFF file was converted to GIF, PCX and MAC via an extremely useful PC shareware program called GRAPHIC

WORKSHOP V6.1. The source TIFF file had the pixel dimensions of 1105 width by 1557 height. The GIF and PCX versions of the TIFF file preserved the pixel dimensions, however the MAC file resulted in a width of 576 and height of 720. The image area retained represents only the top LHS quarter of the TIFF image. The area discrepancy was not an error but probably conformity to APPLE DOS graphics protocol.

In spite of the image truncation in conversion of TIFF to MAC, the image portion on the discarded three quarters can be captured in GRAPHICS WORKSHOP by a very simple image cropping (clipping) facility.

#### CONVERSION SPEED COMPARISON

If the GIF, PCX and MAC images start out as a fixed pixel size of 256 width by 192 in height (the size of the 40 COL TI screen pixel size), the difference in conversion times is insignificant. GIF MANIA will be the slowest if only because of the time required to display the graphics.

The conversion comparison times is of course very significant when the image dimensions far exceed the TI screen size. As in the case of the GIF / PCX dimensions wherein 35 TI screens can be accommodated and approximately 8.4 TI screens with the MAC.

A comparison between GIF MANIA and PCX2PP via GOFER is quite ridiculous, 185 to 21 minutes, whilst GIF MANIA compared to MCPIX with the same dimensioned file (APPLE DOS conformity size) is 26 to 2 minutes.

Comparison between GOFER and MCPIX was also performed (APPLE DOS conformity size), the ratio was found to be 5 to 3 minutes.

Although conversion of TIFF to MAC results in 75% dimensional truncation, judicious use of GRAPHIC WORKSHOP's cropping facility, coupled with MCPIX's better conversion speed, may make MCPIX the preferred choice for the experienced user.

#### NEWS FROM WESTERN AUSTRALIA

In our June 1994 NEWS DIGEST, our editor, Loren West, retyped part of the Perth based TIUP group's March news letter. My attention was immediately rivetted to an item that described TIUP's secretary, Geoff Warner, recent TI activities. Graphics conversion using GIF MANIA, but in particular, a PC based program that allowed an OKIPAX machine to perform as a scanner.

The concept of using a FAX machine as a scanner was one that I had given a considerable amount of thought,

albeit only at a theoretical level, prior to my scanning activities for the 1992 TI-FAIRE. My brother-in-law is still trying to goad his rapidly ageing FAX machine into producing PC recognisable graphic files.

Loren was good enough to supply me with a full copy of TIUP's news letter so that I could glean more information, whereupon I wrote to Geoff to obtain further details. Geoff's reply included a disk full of GIF and PCX files, some of which were products of FAX scanning operation. Alas the very sturdy disk mailer had been severely crushed in the mail, with only one or two files salvageable. Geoff also provided the FAX scanner information that I sought.

#### WHEN IS A FAX NOT A FAX

The manufacturer of the FAX machine PC scanning software was surprisingly enough, a Sydney based firm called ADVANCED SOLUTIONS located at 47 KARRIL AVENUE, BEECROFT, NSW 2119, tel (02) 872 1981.

According to Geoff, his company had purchased the program in order to maximize the use of their OKIFAX machine as a scanner. Geoff's success rate at generating TIFF files with further conversion to GIF and transportation into the TI is quite good.

I contacted ADVANCED SOLUTIONS, and the management was very pleased to supply me with an extremely informative documentation of their company's product.

Briefly, the details are:

The program is very appropriately named FAXSCAN.

It is available for CANON, LANIER / HARRIS / 3M and OKIFAX machines.

Use of the program is realized via an additional active hardware interface that couples the FAX machine to a PC.

Cost of the program and interface is a very reasonable range of \$299.00, \$399.00 and \$699.00 (basic through advanced applications), for an organisation that already possesses a FAX machine and wishes to further utilize its investment as a professional monochrome flatbed scanner.

Best regards

Alf Ruggeri

**END OF ARTICLE**

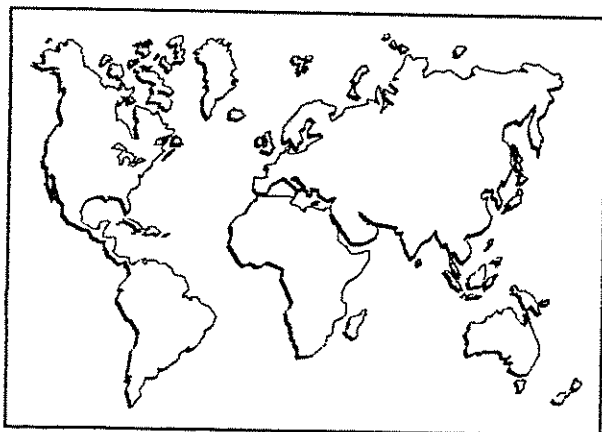
## TREASURER'S REPORT

by Cyril Bohlsen

Income for previous month ..... \$ 560.80  
Expenditure for previous month .. \$ 854.50  
Loss for previous month ..... \$ 293.70  
Membership accounted for \$ 105.00 of Income.  
Shop sales ..... \$ 455.80 of Income.  
The expenditure was made up of the following  
Printing & Postage of TND ..... \$ 268.28  
Purchase of 80 Column Card Parts . \$ 370.24  
Shop Purchases ..... \$ 145.00  
Administration costs ..... \$ 70.98

We wish to welcome to the club

Geoff Lickiss of Taroona Tasmania.



- \*\*\* WANTED \*\*\* -

I am looking for a spare PEB box that somebody might have. If no spares are available I would be willing to purchase a small system which includes a PEB box in good shape.

Bob Relyea (046) 571 253



# AND THINGS

by Geoff Warner TIUP, July 1994.

Tone - dialling through a decadic service.

I had occasion to access a remote computer system from my home recently, and started to think of ways to enable me to go the 'TI way' rather than use the IBM PC - compatible that I cart about with me for employment - related purposes ( and the odd demonstration at TIUP meetings ).

The problem was the remoteness of the system and my unwillingness to go through the hassle of making the call at great personal expense and then recouping the cost through the "system". I have been issued with a Telecon 'Telecard' for occasions such as these, but I don't have tone dialling connected at my house; I was tired of the impersonal interface with a faceless voice after what seems to be an inordinately long wait for an operator; I hated holding a 'tone commander' up to the telephone handset and entering the appropriate codes that way; I wanted to automate everything; but above all, I WANTED TO PROVE THAT IT COULD BE DONE ON THE TI !

\*\*\* EXPLANATION FOR OUR FRIENDS IN THE USA \*\*\*

The Australian 'Telecard' system requires you to dial an access code to get into the system, whereupon you wait for instructions ( voice prompts to use the correct jargonistic term ); you then dial your 'Telecard' number, followed by your Personal Identification Number ( PIN ) and await further instructions; after which you dial the number you wish to connect to, preceded by the area code and followed by a '#' to indicate to the system that you are ready to connect.

This is all very well if you are connected to tone dialling, but it don't work too well if you use decadic, or 'pulse' dialling at your abode or place of work. If this is the case you need to wait and talk to an operator after dialling the first four - digit access code.

The answer eventually came to me while reading through the TELCO documentation - I could use the macro facility of TELCO to access the Hayes - compatible modem that comes as a set with the afore - mentioned laptop in my 'goingS-SewE' setup procedure :

Assign a macro for the access code to the 'Telecard' system and add a ';' at the end of the string to prevent the modem going on line when the call is answered by the

remote 'Telecard' computer.

Assign a macro for the 'Telecard' number and PIN number - and here is the secret to it all - prefix the string with 'ATDT', the command that tells the modem to TONE dial the numbers following. We must also not forget to finish with another ';'.

Assign a macro for each of the numbers you wish to dial, not forgetting the preceding ATDT and the trailing '#' to tell the 'Telecard' computer system to get on with it.

In order to operate in this way you must firstly have an Hayes command set - compatible modem with an in - built speaker and a terminal program that supports macros. All of my tests so far have been with TELCO. You can of course enter each of the strings that I have assigned to macros individually whilst in command mode, but we have computers to make our lives easier, not harder. And besides, sometimes you may type too slowly for the system and end up with the network operator trying to have a conversation with your modem - I KNOW THAT I HAVE !

The operating procedure using this method :

Load TELCO or your preferred telecommunications programme.

Enter terminal mode.

Execute the macro to dial the 'Telecard' service.

LISTEN FOR THE RESPONSE IN YOUR MODEM'S SPEAKER.

When prompted for your 'Telecard' number and PIN number, execute the macro to tone dial your 'Telecard' number and PIN number.

LISTEN FOR THE RESPONSE IN YOUR MODEM'S SPEAKER.

When prompted for the number you wish to call, execute the macro for the number of the service you wish to connect to.

LOG ON, AND ENJOY YOUR SESSION !

Obviously there are other uses for this method, and one that immediately springs to mind is the use of your computer to autodial numbers for you...and then enter PIN numbers...pay accounts etc.

The possibilities are limitless... and you can use your TI to achieve what your mates with more expensive computers can do... at a fraction of the cost.

## 1 Installation

### AsEasyAs Spreadsheet

Whether they're used for monitoring costs or for planning diverse projects, spreadsheets are indispensable tools. After word processors, spreadsheets are the most frequently used application for PC users. Hours of work with paper and a pencil can take only seconds with a good spreadsheet like AsEasyAs. One advantage of this type of program is that it permits virtually unlimited manipulation of the data without the need to learn a programming language.

However, AsEasyAs isn't just a simple spreadsheet because it's also able to display data graphically. Although the help function isn't especially outstanding, it provides much information and can be easily accessed by a beginner. If you need additional information on how to use spreadsheets, refer to the numerous books on Lotus 1-2-3 and similar spreadsheets.

The "checkerboard" matrix screen is common to all spreadsheet programs. When you start up AsEasyAs, a series of "cells", arranged in rows and columns, appear. You can move to the desired cell and enter data by using the cursor keys. The available work space (256 columns by 1024 rows) is much larger than the small section that appears on the screen.

Each field has a specific address in the spreadsheet. For example "B3" represents the third row of the second or B column. You can enter numbers, text, or formulas, including complex relationships between the individual cells, in each cell. These include mathematical, statistical, and financial functions.

The operations setup is simple. Call the program by entering the following at the DOS prompt:

```
ASEASY
```

When AsEasyAs has been loaded you can view the main menu by pressing the slash </> key. From here the program branches into submenus. A help list appears when you press the <F1> key. This list provides a quick overview of the program.

AsEasyAs enables you to use *macros*, which speed up tasks that are repeatedly performed. Macros allow you to combine a set of individual commands, which can be activated by a single keystroke. These macros can be saved with the spreadsheet.

Before using AsEasyAs you should first set up a working disk or copy the necessary programs onto a subdirectory of your hard disk. Also be sure the following files are available:

ASEASY.EXE This file contains the main program.

ASEASY.CFG This is the overlay program.

ASEASY.MSG This is the introductory screen.

ASEASY.HILP This contains the help files.

AsEasyAs also includes several example worksheets, which you should copy into your subdirectory. These files, which contain the ".WKS" extension, include, for example, GRAPH.WKS or MONEY.WKS.

#### 1.1 Program startup

If you want, you can add the following options when you start the program:

```
ASEASY /Option1/Option2/.....<Enter>
```

/Q speeds up the screen operation

/E adapt to EGA video display

/H adapt to Hercules video display

/P panel menus (like in Lotus 1-2-3)

/ATT for the AT&T screen

Additional options are also available. For a complete list press <F1> for the help menu. Then use the <Cursor Down> key to select "General" for a list of these options.

Otherwise, simply start AsEasyAs by entering "ASEASY" at the DOS prompt.

A title screen appears showing important information about AsEasyAs. Pressing any key returns you to a blank worksheet.

## .2 Introduction

AsEasyAs features so many commands and functions that we cannot fully explain all of them in one chapter. Actually we would need a large manual to explain every one of these commands and functions. So we'll discuss only the most important commands and functions. We'll also provide complete examples for the key functions that are essential for working with AsEasyAs.

### 2.1 Starting your worksheet

As soon as you start AsEasyAs, you can enter data. Use the cursor keys to move the cursor on the desired cell. Then try entering some text or numbers from the keyboard. Press <Enter> when you're finished entering the text.

To save time, use the cursor keys instead of the <Enter> key each time you enter text. For example, after you're finished entering text in a cell, press one of the cursor keys to move to another cell. The data will automatically be entered as you move to another cell.

A cell beginning with a number is interpreted by AsEasyAs as a numeric cell. This means that you cannot add text in the same cell that has a number as the first character. If your cell entry begins with one of the following characters, you must be sure that AsEasyAs interprets them as numeric characters:

0 1 2 3 4 5 6 7 8 9 + - @ ( ) # .

If you don't want your characters to be interpreted as numbers (e.g., if you're entering phone numbers), use an apostrophe (') as the first character in the cell.

You must use a period to represent a decimal point (e.g., in "\$80.25"). Sometimes a long number will be displayed as a row of asterisks when it is entered. Don't worry, the number has been correctly stored in memory. All you need to do is change the column width in the worksheet (we'll discuss this later in this chapter).

### 2.2 Changing the contents of a cell

There are two ways you can change a cell. If the change is small (e.g., correcting a misspelled title), use the cursor keys to move to the incorrect cell and enter the new contents for the cell.

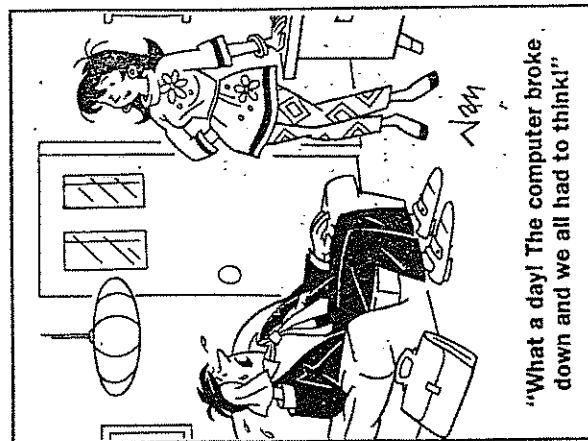
You can also select the Edit mode by pressing the <F2> key. You'll see the cell contents and the cursor to the right of the last character. Use the following keys to make the necessary changes:

<Cursor Left>	Moves the cursor one character left
<Cursor Right>	Moves the cursor one character right
<Home>	Moves the cursor to the first character
<End>	Moves the cursor to the last character
<Backspace>	Erases the character to the left of the cursor
<Ins>	Inserts characters
<Del>	Erases characters

You can complete your data entry by using the following keys:

<Enter>	Cursor remains on the same cell
<Cursor Up>	Cursor is moved one cell up
<Cursor Down>	Cursor is moved one cell down
<PgUp>	Cursor is moved one screen up
<PgDn>	Cursor is moved one screen down

**Note:** If you make a mistake, press the <Esc> key to move back one screen at a time.



### 3 Example Worksheet

The best way to present AsEasyAs is by using an example worksheet and explaining it step by step. Let's call this worksheet "Loan Payment Schedule". It should look like the following figure:

```

F1:Help 2:Edit 3:Macro 4:Abs HEADY! 5:Goto 6:Window 7:Wp 8:Calc F10:Graph
B1 (Un & W10): 0.18
[ A 1.....A1.....B1.....C1.....D1.....E1.....F1.....G1.....
1 Interest 18.00%
2 Total $750.00
3 Period 12 months
4 Payment $68.76 monthly
5
6 Months Interest Principal Remaining Total Total
7 Paid Paid Principal Interest Principal
8
9 $11.25 $57.51 $692.48 $11.25 $57.51
10 $10.39 $57.51 $634.98 $21.64 $115.02
11 $8.52 $58.37 $576.61 $31.16 $173.38
12 $8.65 $59.24 $517.37 $39.81 $232.63
13 $7.76 $60.11 $457.26 $47.57 $282.74
14 $6.86 $61.00 $396.26 $54.43 $335.74
15 $5.94 $61.90 $334.36 $60.37 $415.64
16 $5.02 $62.82 $271.54 $65.39 $478.46
17 $4.07 $63.74 $207.80 $69.46 $542.20
18 $3.12 $64.68 $143.11 $72.58 $606.88
19 $2.15 $65.64 $77.47 $74.73 $672.53
20 $1.16 $66.61 $10.86 $75.89 $738.14
Free: 88% [261k] Auto PDBOOK.WKS Num 10:20:29 am
  
```

Example Loan Payment Plan

### 3.1 Column width

Before we begin, be sure that the cursor is located in cell A1. If necessary, press the <Home> key to move the cursor to this cell.

Next press </> to display the main menu. You'll see the "Worksheet" command listed first. Press <Enter> to select this command and its options.

Then press <Enter> to select "ColWidth" so that you can change the column width. Press <Enter> at "Set". You can then set a column width between 1 and 72 characters. For our example we'll use a column width of 7 characters. To enter this number press <7> or use the left and right cursor keys. Press <Enter> when the column width is set.

Repeat this process for columns B through F but use "10" for the column width.

At this time you should also enter the text. Using the above figure as a guide, copy the text in the appropriate cells.

You should save your file frequently. This is quickly done in the main menu. Press </> and use the cursor keys to select the "File" option. Press <Enter> and then select "Store". You're prompted to enter a name for the file. Enter a name (maximum 8 characters in length) you'd like to use for this example (we're using PDBOOK.WKS). Press <Enter> to return to the spreadsheet.

You can also center the numbers between A9 and A20 (the numbers representing the months) by adding a "A" sign before each number.

### 3.2 Centering text

Next you'll need to set the field format and the column titles. First, move the cursor to cell A6 (confirm this by checking the address indicator in the upper left corner of your screen) and then press </> to access the main menu.

Follow these steps to center text within each cell. Move the cursor to the "Range" option and press <Enter>. Then move the cursor to the "Prefix" option and press <Enter>.

Three choices are presented (left, center and right). Since we want to center text, press the <Cursor Down> key to "Center" and press <Enter>.

Next press <Cursor Right> to move to cell F6 and then <Cursor Down> to move to cell F7. Now press <Enter>. AsEasyAs now centers all the title text in each cell between A6 and F7.

### 3.3 Copying lines

Next you'll need to add a line from A8 to F8. First, go to A8 and draw an underline ten spaces long. After you have entered this, move the cursor back on cell A8 and return to the main menu (enter "Y").

Follow these steps to copy the lines within each cell. Move the cursor to the "CopyCell" option. This copies everything in cell A8. Next press </> (period) to set the range. Then press <Cursor Right> until you reach F8 (this copies everything in A8 from A8 to F8). Press <Enter> to copy the cell contents.

### 3.4 Using monetary amounts

Since most of your sample spreadsheet contains dollar figures, you'll need to set up the worksheet so that any number that is entered is automatically converted to dollar figures. Move the cursor to B1 and press </> to access the main menu.

Use the cursor keys to select the "Worksheet" option and press <Enter>. Then select "General" and press <Enter>. This ensures that the settings will affect the entire worksheet. Move the cursor to the "Format" option to set up the format for numbers. Then select "Currency" and enter the number of decimal places (which should always be 2 for dollar amounts). Press <Enter> and you'll return to the worksheet.

Notice that the last step is the same as the default—in fact, if you skipped this step, AsEasyAs would still set two places after the decimal point for currency.

Since you probably don't want your entire worksheet to be in dollar figures, you have to perform a special edit on a few cells. Press </> to access the main menu. Let's start with cell B1.

Enter:

Range Range command

Format Set up format for numbers

Percent Set up for percentage

2 Number of decimal places (same as default)

<Enter> Execute the command (you only need this for cell B1)

Repeat these steps for B3 except use "General" in place of "Percent".

### 3.5 Entering functions

A function is a standard formula that is pre-programmed into AS-EASY-AS. For a list of available functions in AS-EASY-AS activate the help menu. Press <F1> and look for topics starting with "@", for example @Math and @Finance.

Next, you'll use a function that calculates the monthly payments for a loan. This time you'll work directly on the worksheet and not use any menus. Move the cursor to B4.

Enter:

EPMT (B2, B1/12, B3)

The formula appears on the top line as you enter it. Remember, if you make a mistake, you can use the <Ins> and <Del> keys or go to <Esc> and start over.

Don't be alarmed if an "ERR" message appears on the worksheet at B4. We haven't put any values in yet for B1, B2, or B3, so AS-EASY-AS assumes the values are all zero. When it tries to divide 12 into 0 an "ERR" is the result.

All functions in AsEasyAs begin with the @ character. In this example, we're using the @PMT function. B2 represents the loan amount or principal; B1 is the annual interest rate divided by 12, the number of months in a year (i.e., B1/12 is the monthly interest rate); and B3 represents the number of payments. The general rule for the @PMT function is:

@PMT(Principal, interest, period)

### 3.6 Entering formulas

You'll now start entering your own formulas on the worksheet (these differ from functions because you have to write them yourself). Place the cursor on B9.

Enter:

+B2\*B1/12 Calculates monthly interest

<Cursor Right>

To C9 (the data placed in the last cell is automatically entered when you move the cursor)

+B4-B9 Calculates principal

<Cursor Right>

To D9

+B2-C9 Calculates remaining principal

<Cursor Right>

To E9

+B9 Calculates total interest paid

<Cursor Right>

To F9

+C9 Calculates total principal paid

Press <Enter>

The plus sign in the formula instructs AsEasyAs to use the value in that cell (e.g., the last step copies the contents of C9 into F9).

Continued next month



# REGIONAL GROUP REPORTS

## Meeting Summary For SEPTEMBER

Central Coast	10/9/94	Saratoga
Glebe	08/9/94	Glebe
Hunter Valley	11/9	18/9/94
Illawarra	13/9/94	Keiraville
Liverpool	09/9/94	Yagoona West
Sutherland	16/9/94	Jannali

\*\*\*\*\*

### CENTRAL COAST Regional Group

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

\*\*\*\*\*

### GLEBE Regional Group

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

\*\*\*\*\*

### HUNTER VALLEY Regional Group

The Meetings are usually held on the second or third 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) 428 176 is now used exclusively by the IZAP BBS which also has TI support. Geoff.

\*\*\*\*\*

### ILLAWARRA Regional Group

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

\*\*\*\*\*

### \* 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). Mum will let you know were I am or when I will be home.

NOTE: I will be doing relief managing at several stores, and will not be easy to reach during the day. Some of the stores I will be managing trade to 10pm/11pm/12pm and I am working up to 14 hours a day, 5 days a week.

\*\*\* ALL WELCOME \*\*\*

9th September 1994

7th October 1994

My Place : 34 Colechin St. Yagoona West

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

### SEPT MEETING - 3rd SEPT

### OCT MEETING - 1st OCT

\*\*\*\*\*

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

September - 10th September

October - 1st October

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

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