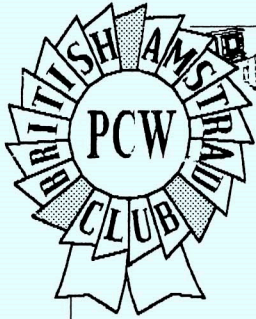


# The Disc Drive

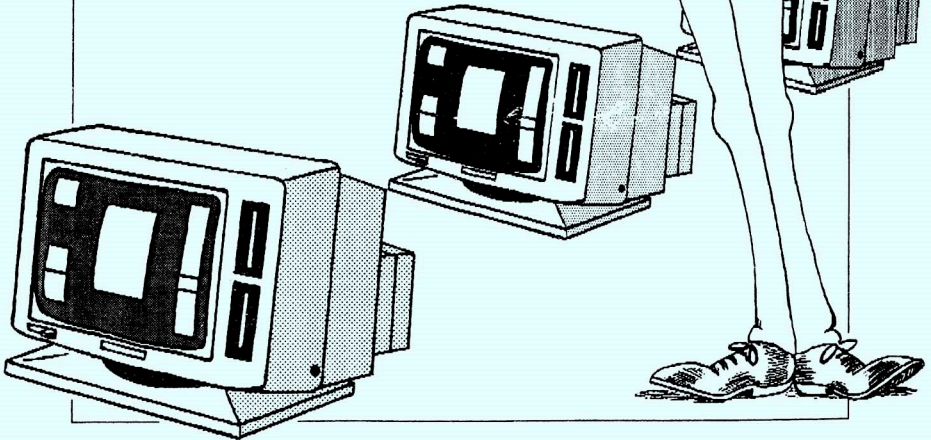
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ISSUE 27

WINTER 2001



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The Disc Drive is a compilation of articles submitted by fellow members of the British Amstrad PCW Club just like you! So if you would like to contribute, or there is a subject you wish to know more about, why not drop me (the Editor) a line.

Remember, "The Disc Drive" attempts to cater for the raw beginner as well as the more experienced user, so something you perhaps consider trivial could prove to be of great interest to other members.

Articles and small items of interest are accepted in any format, on paper (typed or hand written), on disc (3", 3.5", 180k, 720K.)

The Editor reserves the right to edit articles.

So come on get tapping those keys.

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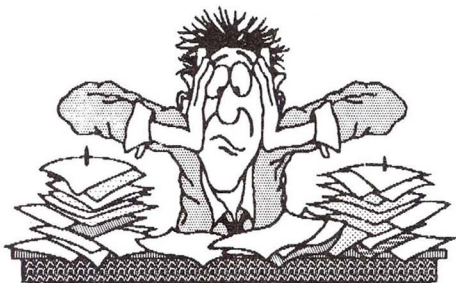
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# EDITORIAL

This is getting a habit! Apologies once again for the delay in getting this issue to you. It was supposed to be the Autumn issue, but as you will see we have made it the Winter issue as I am still busy with work.

Unfortunately, I have had to re-organise my office area to make way for a new piece of equipment and unfortunately the PCW I had set up to handle eMail has had to go and so my eMail address is no longer in operation. In the not too distant future, this should be resolved, but please don't let this stop you from contacting me by other traditional means.

As usual I am in dire need of material for The Disc Drive and whilst I am very grateful to those members who already contribute, I could really do with more tips from, those I would like to refer to as, the less technically minded. It has been suggested that I put together questions and answers or raid the early PCW magazines for interesting ditties. But, whilst I am obviously willing to contribute to the content of our magazine, I strongly believe The Disc Drive should be kept as a Club Magazine full of contributions from our members. I am not expecting members to come up with hereto unpublished tips and ideas; after all the PCW has been around an awful long time and I should imagine it would be nigh on impossible to come up with some unique item that had never been touched on before. However, if you have been given a tip or information that has really helped you in the past or have read an article

that gave you inspiration, please pass it on to me, so that I can let the rest of our members know.

Finally, it's probably old news to the majority of readers now, but I would like to inform our members that Instant Recall 3 is now available from David Landers, Brinkburn Garden Cottage, Longframlington, Morpeth Northumberland NE65 8AR Tel: 01665 570662. If you remember I mentioned its imminent release in the last issue of The Disc Drive and the final release is even better. As David emphasizes, Instant Recall 3 is an psuedo Spreadsheet and if you are a competent user of, say, SuperCalc 2 then Instant Recall 3 may not be of interest, although having said that, it's worth a look just to see what LocoFile and LocoMail can really do. As David says 'LocoMail as you've never seen it before', I'm very impressed. If you prefer to stick to LocoScript and only require moderate use of a spreadsheet then Instant Recall 3 could be right up your alley. It only takes up a few K and it's there ready to use in an instant (pardon the pun!)

I trust you all had a good Christmas and are looking forward to a fruitful New Millennium.

# HOT TIPS

## External Printers!

No! This is not a range of printers you keep out doors. The word external refers to a printer other than the one that originally came with your PCW, often referred to as the built in printer. These built in printers are relatively simple, robust devices that will not work with any other machine other than a PCW, and further more the 8000 dot matrix printer will not connect up to a 9000 series PCW and vice-versa. Many users find the original printer more than adequate for their needs. I still use the 9000's daisy wheel printer for addressing envelopes and label printing. However if you require improved print quality then it may well be worth investing in an external printer. The PCW9512, PcW9512+, PcW9256 and the PcW10 all come with an external printer port built in. Unfortunately if you own a PCW8256 or PCW8512 you will need to get hold of an external printer interface that plugs onto the expansion port on the back of your machine and sadly these are hard to come by now, but it's worth asking around.

Moving on to an external printer doesn't mean you have to disconnect your original printer. You can have up to four printers connected at any one time and from within the software switch between them.

Depending upon the resolution of the printer you go for, it might be wise to invest in additional memory, especially if you only have 256K and are looking to print graphics. Resolution is often referred to as dots per inch or dpi for short. Basically the higher the dpi the

better the printed output. For example the original dot matrix printer works at 180dpi, the Hewlet Packard Deskjet 510 300dpi, and the Canon BJ10sx 720dpi. There is a marked difference between the original printer output and the Deskjet working at 300dpi. But in my experience, I see surprisingly little difference between the output of the Deskjet and the BJ10sx working at 720dpi.

Additional software in the form of a Printer Support Pack will also be required, or at least an upgraded Start of Day before you can start using your external printer with LocoScript. Both available from SD MicroSystems, and it may be worth noting that not all the built in features of your external printer may be available when used in conjunction with a PCW.

As a final word of warning! Most of the new printers on the market today are dedicated for use on Windows on a PC and they are highly unlikely to work with the PCW. Your best bet, is to look for a second hand printer and I should imagine you could pick one up for less than £40.

Steve

## On Your Head be it! Repair Beware!

Seeing the item "Keep Your PCW Running" in Issue 26 of Disc Drive reminded me that the Drive A band on our 12 year old PCW8512 needed replacement; we were getting an occasional error message on loading the SOD disc. I'd got a spare band which had been kindly supplied by Steve as a welcome present on joining the Club and I'd done the

job before so it only took about 35 minutes. I took the opportunity to clean the head while it was exposed, something I've never seen mentioned in any magazine but it's worth remembering. The job went smoothly, I didn't even lose the write protect pin this time! On loading LS4 the initial screen was worryingly slow to appear but eventually I was able to do some work using Drive B. However things went badly wrong when attempting to format and copy a new disc for Drive A; lots of loud drive activity noises and frantic LED flashing followed by Sector Missing and other serious error messages. It was just possible to slowly read from or write to the drive but verifying was uncertain and jerky, disc formatting was impossible.

Gloomy questions entered my mind, Had I done irreparable damage poking around with the dental probe? Had I broken one of those delicate connector wires or bent a pin? Had the fluid used to clean the head eaten into something important? Had I better start looking at adverts for exchange drives? Some of you will have guessed by now and you're right, stripping down showed that the band had been installed with a twist in it, so much for the quick 35 minute job! Incidentally the 12 year old band was in surprisingly good condition, still fairly elastic and hardly stretched so the initial problem was probably the very dirty head.

Denis Martin, Humbled PCW user since 1985.

### **Able to Lable**

Do you want a sticky label or two in a hurry and haven't the time to produce them by (or can't understand!) the LocoScript recommended method as per Page 21 of the LS4 User Guide? That way is fine if you are a club secretary or LocoMailer but my labelling

needs are much simpler, just the odd one required occasionally. Try this way, it's crude but quick and works perfectly on the PCW's own printer or our Epson LQ100.

Set up a blank page with a tab to get the subject matter somewhere central and type in the addresses, disc or jampot labels wording that you need one below the other, you'll probably get 6 items per page, leave 6 lines or so between them. Name the file LABELS.PRI or something similar and print it out. Then use a Pritstik solid glue applicator to tack a blank label over the desired address, feed the sheet back into the printer and reprint the file. I've been using typewriter address labels produced on a roll by Fisher Clark for a couple of years now with no printer problems. Only a small smear of glue is needed on the printed backing page but don't use the page more than once as residual adhesive could contaminate the printer head. Print the page out fresh each time; paper is cheaper than repair bills.

DHM

Editors Tip/s!

I like this one!

An additional suggestion would be to leave the paper type as A4 Portrait and go to Paper Layout and increase the Header and Footer zones so that you have a Page Body of the required length (Label Height, Nine lines?), return to edit and only produce one label per page. Use the [ALT]+[RETURN] key combination to insert an End of Page Marker. You would then print out a control sheet which would only have one label in the centre and you could use the same sheet over and over again as the labels would always be printed in the same place. Another added advantage of this method would be the ability to print out just the label you want by selecting Part of Document when you go to



print. You can also purchase Non permanent adhesive and if this was applied to the centre of your control sheet you could peel and stick a number of labels on the control sheet before having to apply more adhesive.

An alternative, and more advanced tip I would like to suggest is that you might like to change the Paper Type to 1½" Labels. This is one of the default paper types and whilst editing a document, can be found by pressing [F1] and going to Document Set Up. Next, press [F5] Page and select Paper Type, cursor down to 1½" Labels and press the [+] key to tick this option, then press [ENTER] to come back to the page options. Now cursor down to Page Layout and press [ENTER]. From the bottom of this menu you will see that you have a Paper Length of Nine Lines. Note this is Paper Length. The length of paper is calculated in sixths of an inch, hence 1½" = Nine Lines. With LocoScript 3 or 4 this doesn't mean you can only have Nine lines of text. Use a smaller font and you can have more. However, use a larger one and you will get less. Hope this is making sense? From this Page Layout menu I would suggest you set the Header zone to 0 and the Footer zone to 1, giving you a Page Body of eight Lines (8 sixths of an inch) Once you have set these figures press [ENTER] and then [EXIT], and [EXIT] once again to Return To Edit. Now your pages are only 1½" long and you can set up a label on it's own page. Pressing [ALT]+[RETURN] to move onto the next page/label. The advantage of this is that you can have a file with a hundred or so labels and print out just the ones you want by selecting the page number when you go to print, and you will probably find that a roll of typewriter labels (without tractor feed holes) may well pass through your printer satisfactorily.

### **Disk Damage**

Unless special care is taken, sending disks through the post can be a waste of time. Ideally, and as the Post Office recommends, the safest way is to purchase purpose made mailing packaging or screened envelopes and I would certainly agree, if

what you are sending is an original without any copy held in reserve. However, the majority of discs I send hold copies of files I have placed on the disc and so, if anything should happen to the disc there really isn't a problem. So what's the best way?

Wrapping a disc in a covering note and placing this in an ordinary paper envelope, is asking for trouble. This will be treated as all other autonomic mail and I have received discs crushed with the metal protective shutter of 3½" discs bent and distorted. Incidentally, it is a good idea to check this metal shutter for the slightest distortion prior to inserting it into your drive, because a slight squeeze of the shutter spine opens the wings and although the disc will go into your drive without any problem, getting it out is another question and I know of one person who managed to damage a drive in the process.

I generally wrap the disc in a covering note and pop it into a small jiffy bag or padded envelope and have seldom have any problems. The weight of the envelope, covering note and Disc, still coming well under the second or first class letter rate.

### **LocoScript on the Titanic!**

Did my eyes deceive me or not? Whilst watching the Channel 4 Programme 'Battle for the Titanic' on Sunday the 18th of November 2000 between the hours 4:55pm and 6:00pm I am sure I noted (on two occasions) LocoScript (version unknown) being used by a journalist named Alan Road of the Observer Newspaper. He was being interviewed regarding his part in the on going saga "who owns the rights to salvage on this ship". A British ship sunk in International waters but with French and various American groups fighting in an American Court over ownership of Salvage rights and the American Court seems to have the right to give a ruling on the matter, but this is another story.

Can anyone confirm that my eyes did not deceive me?

John King

# Minidisc Cataloguing

by Graham Swepson

One of the entries for the recent PCW Club 2000 Competition was a Basic program for the cataloguing of minidiscs.

For members unfamiliar with minidiscs, these are metallic discs 2½ inches in diameter enclosed in an inner, non-removable, plastic case in the manner of a floppy disc. As supplied, they come in an outer, hard and usually transparent, plastic case. The discs can be recorded on by music or speech in a digital format in tracks like those of a CD. As most minidiscs are a recording medium for private use, their content is determined by the private user rather than by the manufacturer, and consequently the manufacturer cannot supply a contents list and there is a need for the user to be able to do so. It is the purpose of MINIDISC.BAS to help meet this need.

The internal width of a minidisc's outer case

is 72 mm. MINIDISC.BAS produces closely printed panels on paper slips 72 mm wide that fit into the outer case along with the disc. The slips carry the disc title, the track numbers and the track titles of that disc. See example.

MINIDISC.BAS provides for the display, entry, removal, editing, sorting, searching, printing and filing to your computer disc of the minidisc disc and track titles. Up to 98 discs can be accommodated with up to 99 tracks per disc.

MINIDISC.BAS is suitable for use by all PCWs and PcWs that use either the PCW Matrix or PCW Daisywheel (Mini Gothic 15 printwheel required) printers or an external printer that uses Epson print codes. An on-disc manual, written in LocoScript 2, is provided.

## POPS REEL F PRIMARY

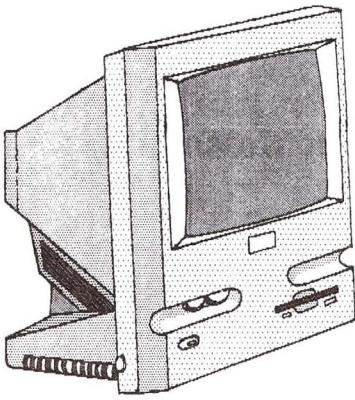
- 01 Where Eagles Fly: Moira Carr(from tape050800)
- 02 Nunc Dimittis:G Burgon, boy soprano (050800)
- 03 Nunc Dimittis:G Burgon A Thurlo & CCchoir-0508
- 04 Will you go, laddie, go?(live120889)JuCollins
- 05 The Rose: Bette Midler(from tape 050800)
- 06 Automatic Lover1978:Dee Dee Jackson 050800
- 07 Hazard 1992: Richard Marx (fr
- 08 I am a rock: Simon&Garfunkel(
- 09 Nessum Dorma:L Pavarotti (fro
- 10 Solsbury Hill: Peter Gabriel
- 11 Book of Days 1992: Enya (from
- 12 Up town up tempo woman:Randy
- 13 The Celts?: Enya (from tape 0
- 14 Take My Breath Away (Nov 86)B
- 15 Life, Oh Life:Des Ree (from t
- 16 'Badlands' music: C Orff (fro
- 17 Somebody to Love (1983):Queen
- 18 You're so Vain: Carly Simon(f
- 19 Rivers of Babylon 1978:Boney
- 20 We're Goin to Make You a Star
- 21 Baker Street 1978: Gerry Raff
- 22 Hello, This is Joannie: Paul
- 23 My Way: Frank Sinatra (from t
- 24 The Power of Love(later versi
- 25 Hotel California:The Eagles (
- 26 San Francisco: Scott McKenzie (R2 120800)

## BELIUS 2

:FinnishRSO/JPSaraste290600  
se:BBCScSO/JMaksymiuk160600  
othenburg SO/N Jarvi 201099  
/Herbert von Jarajan 141199  
de:GothenburgSO/Travi151000

## E KIRKBY 2

- 01 Exultate Jubilate (part): Mozart
- 02 Good Neighbour, Why? Why?: Purcell
- 03 Wedding Cantata 202: Bach
- 04 Hunt Cantata (parts) 208: Bach
- 05 Stripped of their Green our Groves appear
- 06 In Fields Abroad: William Bird
- 07 Regina Coeli, K108: Mozart
- 08 L'amorosa Roco Stante: Mozart
- 09 As cheers the Sun, Joshua: Handel
- 10 Nulla in Mundo Pax Sincera (full): Vivaldi
- 11 Sheep may safely graze (most): Bach
- 12 You faithful, You constant (most): Handel
- 13 Lascia ch'lo Pianga (Rinaldo): Handel
- 14 Dica il Falso, Dica il Vero(Alessandro)Handel
- 15 Columba Aspexit:HoB EK & Gothic Voices 270800
- 16 Now that Sun has veill'd: RooleyHogwood 130900



# Idiots guide to using the PcW16 Rescue Disc

It would seem from the number of requests I have received for help with re-installing the Rosanne Operating System from the supplied Rescue Disc, that the PcW16 manual is useless in this area (and, of course, in many others). So I hope the following plain English Step by Step instructions will assist those in need.

Firstly though a word of warning – back up all those files saved in the cabinet to disc (see page 141 of the user manual for help in doing this) something you should do automatically with important work anyway, otherwise all will be lost! If your machine has crashed then you probably will not be able to do this, so hard luck and remember to back up those files in the future.

Switch your PcW16 on, if you have not already done so. You will see in the top left hand corner two words 'Tasks' and 'Setup' click on 'Setup' and from the drop down menu click on 'Set System Options'. From here you will be able to tell which version of the operating system you are using – minimum requirement is v1.12 or perhaps it would be best to obtain from The British Amstrad PCW Club version 1.13 which contains the Spreadsheet bug fix.

Insert the Rescue Disc into the disc drive and then click on 'UDATE OPERATING SYSTEM'. A box will appear detailing the operating system on your disc and the operating system installed on your machine plus a request: 'Do you really want to install

the Operating system from disc?' Click 'YES'. Then up comes another box stating: 'If you proceed, the entire contents of you Filing Cabinet will be lost. You should not proceed without first using the "Backup Cabinet to Disc" command, in the File Manager.

If you backed up (copied) all your files as I suggested at the start then click 'OK'. Another box will now pop up asking "Are you sure you want to do this?" Click 'OK'. No turning back now, have a cup of tea and watch your machine firstly erase all files and then installing all the new Operating System Files.

Eventually a box will appear requesting 'SET TODAY'S DATE', set date and click 'OK', the next box asks 'SET CURRENT TIME', set the time and click 'OK'. Then comes a number of boxes, one at a time, entitled 'ENTER USER INFORMATION' asking for various personal details, either enter the required information and click 'OK', or if you have nothing to enter just click 'OK' to move on to the next box. Do not worry, all these sections can be changed at a later date.

After a small delay a further box surfaces requesting 'SELECT PRINTER'. Click on the printer you use (do not forget you can scroll down for further printer options) or the nearest recommended option to it, then click 'OK'. There will be some delay, depending on the type of printer, whilst the Fonts relating to your particular printer load – be patient. As with the last section this can also be changed later.

The next and last box to show is titled 'SET STARTUP OPTIONS' select the 'START UP AT THE DESKTOP' option and click 'OK' and that is that!

You will now need to re-install to the cabinet, any software that you use on a regular basis such as 'CP/M FOR THE PcW16' and to test out your machine.

I feel it is worth re-installing the operating system once every, say, six months even if no faults are apparent. Should you suspect a problem re-install you Rosanne Operating System Files using the latest available Rescue Disc and be sure to **Back up** your cabinet files first.

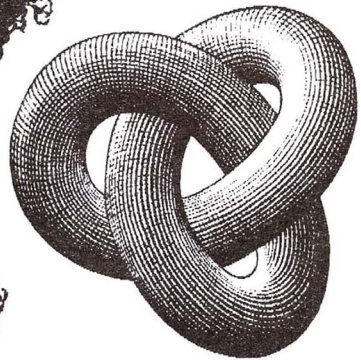
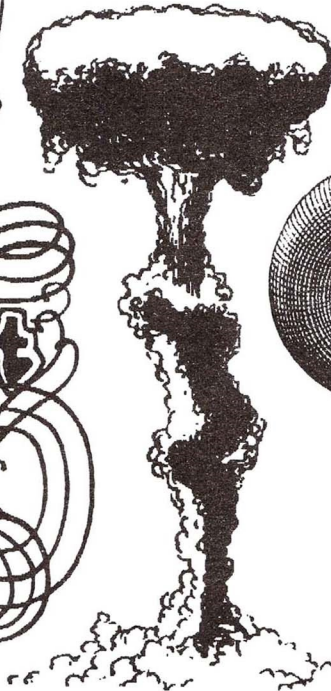
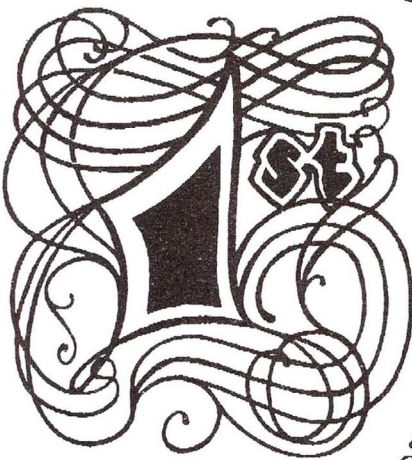
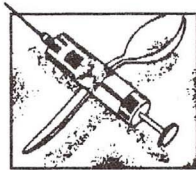
I have found it difficult to relay the above information over the telephone or via electronic mail so now I can hopefully enjoy my evenings

in peace, but please contact me should you feel any of the above sections need to be expanded upon.

Please remember that the PcW16 is the most unreliable, temperamental last in the line machine (using unique software) from a range of excellent, reliable forerunners, many still in service since 1985. When it dies, it is terminal and to the best of my knowledge there is no one around willing to attempt repairs, therefore I the Rescue Disc does not get the machine up and running nothing will.

John King Tel:01708 630477

GALLERY



# From PCW to P.C.Windows

by Mike Elliston

Probably the most common enquiry I get nowadays about the PCW is how to move data from PCW discs to a PC, usually to one of the programs which run under Windows. In writing this article I am not advocating that you all immediately put your PCW in the skip and go out and buy a PC. However there are obviously those of you who have been writing fairly major pieces of research over the last ten years or so and whose only copy is stored on a single 3" or 3.5" PCW disc.

The first thing I am going to say to you is: Make at least two other copies of that disc! Put one down in the garage or the garden shed so that if the house burns down there's a copy somewhere else. Give another copy to a friend or relative as a emergency measure. Never have just the one copy of any important piece of work. *Discs do fail.*

## Types of PCW discs

PCW data can be stored on several different types of disc: The A: drive on the 8256/8512 series is a 3" CF2 (Compact Floppy, 2-sided) disc (180k unformatted) holding 173k on each side. The B: drive on the 8512 series and the A: (and perhaps B:) on an 9512 is a 3" CF2DD (Double Density) which can store 706k of data (720k unformatted).

In the early days of the PCW, add-on 5.25" drives were available which emulated the 3" CF2 discs but there are so few of these about that I shall ignore them. If you do have one you'll have to treat it as a 3" disk as below.

The more recent PCWs (excluding the PcW 16) were fitted with 3.5" CF2DD double density 3.5" drives and various manufacturers have been supplying 3.5" drives which can be fitted as either A: or B: drives on both the earlier 8000 and 9000 machines.

The rare 173k/180k 3.5" A: drive for the 8000 machines must be treated as a 3" CF2 below. You will not be able to read this type of disc in any other than the drive in which it was created.

## Data versus programs

Please note that we are only talking about *data* discs, not CP/M programs. Don't even think about copying a CP/M program onto a PC and trying to run it under DOS. CP/M stands for Control Program for Microprocessors and is the operating system used on the PCW. DOS means Disc Operating System and is the operating system for (most) PCs. (Even Windows is just a front-end program running under DOS.) If you try to run a PCW CP/M program on your PC you will almost certainly lock up the PC and it will hang.

## Data storage methods

On the PC your data (the letters, documents, files you wrote, not the programs they were created in) is usually stored on a hard disc and/or floppies, preferably both so you have a back-up on a floppy of the work saved on the hard disc. (The hard disc drive is permanently running inside the machine, the floppy disc

drive is the slot on the outside where you insert your discs.) Modern floppy discs are usually 3.5" DD (Double Density 720k) or, much more frequently, HD (High Density 1.44 Mb). Older PCs can also access 5.25" in various sizes and densities which we shall ignore. If your PC has only 5.25" drives you are most unlikely to be able to copy your PCW data onto it, and it is extremely unlikely to be able to run Windows anyway.

There are also other high capacity storage methods such as ZIP drives and the special 3.5" 120Mb discs used on PCs which I shall ignore except to mention that the 120Mb drive can usually read a 1.44Mb disc but I have reservations about its ability to read a 720k disc successfully.

### Communications

As I said above, we are only talking about copying *data*. These can be transferred from the PCW to the PC by one of two means: by a cable connecting the two machines or on a disc which both machines are able to read. Transferring the data by a cable linking the two machines requires a serial port on each computer and a communications program to allow them to talk to each other. Do not be put off at this stage, it is not as difficult as it sounds. I have successfully used the CP/M and DOS versions of the MiniOffice Comms programs running on both a PCW and a PC simultaneously with the serial ports linked by a Null Modem cable (or a simple cable and a Null Modem connector).

Don't be put off by these new phrases. A Null Modem cable is merely one arranged with a 'twist' in the wires inside such that line 1 at one end goes to line 25 at the other, 2 to 24, 3 to 23 etc, so that what is sent at one end is received at the

other end. The one thing you will need for all PCWs is a CPS 8256 Parallel/Serial Interface which adds a 25D male serial port to the expansion slot on the back of your PCW. If you have an external printer on your 8000 you probably have one of these already but now is the time to look out for one being thrown out or sold cheaply by someone buying a PC.

### A free comms package

Tucked away on the LocoScript side of your 8000 Master Disc, and on the CP/M disc if you have a 9000, is a program named Mail232.Com. On some discs this is a hidden file and you will need to show Hidden files with f8 before you can locate it. Even though it is sometimes stored on the LocoScript disc it is still a CP/M program which must be run from the CP/M A> prompt. Mail232 is a simple communications program which comes free with the PCW. With the two machines connected by a cable as described above you can use Mail232 on the PCW, and the Mode utility and Copy on the PC running under DOS.

In addition there are a number of other comms programs available but the principle is the same; you set the communications requirements on the two machines the to the same settings and send the file from a PCW disc drive to a floppy or hard disc drive on the PC.

### Copying 3" floppy discs

The cable and comms program method is usually the sole option available if you have only 3" drives, unless you either get a 3.5" fitted to your machine or can get your data copied onto 3.5" discs by a friend. If you are going to get a friend to do it for you please copy all the files you *need* onto one disc all in one group. This may mean

that you need to rename one or two files so that you do not overwrite one another. Asking your friend to copy Alpha.Doc from one 3" disc and Beta.Doc from another 3" disc and Gamma.Doc from a third all onto one 3.5" disc will soon sour the relationship.

### Using 3.5" discs

If you have a 3.5" drive on your PCW life is so much easier. There are programs for the PCW which can read DOS discs and those for a PC which read CP/M discs. My own preference is to use either 2in1 (originally from Moonstone and now available from LocoScript at SD Micro-Systems) on the PCW or PCW.EXE (which comes with the Viewpoint package) from Messrs. Creative Technology. There are others available but I think these two are the friendliest.

You must use 3.5" DD (720k) discs to read and write on a PCW. Do NOT try to use HD (1.44 Mb) discs; they will not be reliable. I know you've got a friend who uses them all the time but your data is far more valuable than the cost of a disc which could fail you. If you do insist on using HD discs on your PCW (because your friend gets away with it) when you put them in the PC to be read the PC will tell you that the disc has not been formatted!

Be sure to format the PC discs on the destination PC machine, NOT in 2in1 on the PCW. Be aware that modern High Density (1.44Mb) drives on a PC are very unlikely to read 720k DD discs if formatted in 2in1 on a PCW. If you find that the PC won't read your 720k DD discs, especially a newer PC, simply reboot the PC and start by reading the DD discs only for just that session and not any HD discs.

### Using 2in1 on the PCW:

Load CP/M and then load the 2in1 program. Up will come a screen with four rectangles. The top left corner will hold simplified instructions for using the program. Depending on which machine you are using (8000 or 9000) the other panels will display the contents of the A:, B: and M: drives. Whenever you put a new disc into a drive you must press L to log that disc (just as you have to press f7 in LocoScript).

If you have a machine with a 3" and a 3.5" drive put your 3" data disc into the 3" drive and a blank formatted PC disc in the 3.5" drive. Note that a 3" B: drive can read from both 173k CF2 and 706 CF2DD discs but that the 3" A: drive on an 8000 can only read from a CF2 173k disc. If you have data on both 3" CF2 and CF2DD discs it is better to do all the CF2DDs first and then the CF2s later or the drive may protest at having to successively read various formats (especially if the drive is on its way out). If you have two 3.5" drives put your PCW data discs in one and the blank PC disc in the other.

Press L to Log both discs and there will appear in the respective panels a directory of the first few of the files on the discs/s and, below the panel, an indication of the type of disc, viz CF2, CF2DD or PC/DOS. At this stage the DOS discs should be empty. Press T to Tag the files you wish to copy. Note that if you first press W for Wildcard and select the file specification \*.\* this will Tag all the files on the disc. Then press C to copy the required files from the PCW disc to the PC disc.

Note that PCW discs have 16 user groups where numbers 8 to 15 are the same as the Limbo areas in LocoScript. Press U

to select another user group on the PCW disc and select the files to be copied as above. Note that if you copy from several PCW user groups onto the one PC disc files of the same name in different groups will overwrite files of the same name which have been copied earlier. Name or rename your files most carefully for this reason.

You are used to the 16 user groups on a PCW disc (0-7 plus Limbo 8-15). PC discs do not have these 16 groups, they have directories and sub-directories instead, up to 64 or more, arranged rather like the branches on a tree. Note that the 2in1 program can not access these directories or sub-directories on a PC disc, only the root directory (equivalent to user group 0 on a PCW disc) so do not bother to create them after you have formatted your PC discs. 2in1 can only copy to the *root* directory on a PC Double Density disc. As explained above, don't even bother with HD discs!

Repeat copying the files until the PC disc is nearly full and switch to a new one for further PCW files. (Remember to tell the program you've switched discs with the Log command.)

### What to copy to the PC

Do not copy LocoScript files from the Limbo areas to the PC disc. These are only earlier versions of the files in groups 0-7 and you may overwrite a newer file with an older copy. Do not copy any files with the extension .GRP to the PC disc. These files are usually empty and are merely used by LocoScript to 'name' the different groups. They will have no meaning on a PC.

Do *not* copy any files with the .Sub, .COM, Bin, Hex, .OVL or similar program files to the PC. They are intended to run under CP/M and could damage your PC.

Don't bother to copy letters more than a year old. They are a waste of space and will simply take up room on your PC and probably never be accessed again. Be aware that a letter occupying just one or two kilobytes (1k or 2k) on your PCW will occupy 32k on your PCW because that is the minimum storage block size on a PC! If you really need access to a string of correspondence collect the all together in one compendium file (say, Ltrs1997.LS3) by using Insert, and then copy that one file to the PC. You will probably do just as well to simply print them out and keep a copy.

Do not copy Template.Std files onto the PC disc (unless you intend to continue to use LocoScript Professional on the PC). They are unnecessary and will mean nothing to Windows programs.

### Duplicate File Names

Be very careful of overwriting an earlier file of the same name. You must organise your files properly before you start any programme of copying files from the PCW to a PC. I recommend that you go through all your discs and omit any files which are passed their sell by date. Organise the other files into a sensible pattern. For example Chap\_01 .LS3, Chap\_02 .LS3, Chap\_03 .LS3 will be of far more value to you later than Biscuits.Doc, Recipes.Mar or Bank .Ltr. I stress the extension LS3 for LocoScript 3 files, etc, because later on you are going to convert these to other file types and you will need to know from which source you files were derived. In particular do **not** use .DOC as an extension as this is used by Word for Windows which may try and edit your file with disastrous results. Think about a file renaming convention for your data *before* you transfer to a PC disc.



Once you have copied some of your PCW files onto a PC disc insert the PC disc into the PC and use either Copy (from the DOS C:\ prompt), File Manager (in Windows 3x) or Explorer (in Windows (x) to copy the files onto either a PC floppy disc or the PC hard disc. I recommend your creating a directory on your hard disc called, for example C:\pcwstuff, to temporarily store your PCW files or you may accidentally overwrite DOS or Windows files of the same name somewhere else on your hard disc. That way you know where they came from and what format they are in, e.g. LocoScript 3.

### Using PCW.EXE on the PC

As above, create a directory on C: called C:\PcwStuff to copy everything to. The program assumes you are copying .MDA files for conversion to PCX or similar files for use on PC graphics programs and will invite you to copy the files to C:\View where ViewPoint is stored. This is OK as long as you remember where you saved your files.

Put your PCW CF2DD data disc (720k only) into the PC disc drive and run PCW.EXE. It will give you the options to List files on either your PCW disc Or the PC. You can Copy your files from the PCW disc to C:\PcwStuff (or C:\View) or a DOS disc in the B: drive. PCW.Exe will not work on a PC which has only one drive, i.e., A: only with no hard disc. There must be A: and either B: or C:. What is brilliant is that it automatically recognises whether your disc is a CF2DD (from a PCW) or is a DOS format disc or hard disc.

It can read all 16 user groups on a PCW disc and, providing you know the correct path, can read DOS sub-directories as well (e.g. C:\View\MyFiles). It is better to List

a PCW disc before you simply Copy it. Note that it copies selected files or, by using the \*.\* wildcard, you can copy all the files from one user group in one go. It's best to List, 1, then List, 2 etc to see what is in each group before copying everything willy-nilly. If it's a LocoScript disc please ignore the files in limbo in user groups 8-15 for the reasons explained above. See the earlier comments about having a sensible file naming convention to prevent overwriting.

I repeat: do NOT copy PCW programs onto your PC. If you try and run a PCW program on your PC you can do serious damage. You must copy *only data* files, letters, documents, reports, etc that you have created.

### What else can I copy?

Besides text files from a PCW word processor you can also use other data files on PC provided that you have the equivalent PC program which can use them.

SuperCalc 2 .CAL files will import directly into SuperCalc on the PC. If you wish to use them in other PC spreadsheets use the companion program SDI (Super Data Interchange which comes with SuperCalc2) to export them to CSV (Comma Separated Variables) files on the PCW first. Excel can import CSV files.

MicroDesign .MDA area files and CUT picture files can be used on the PC also but see below. You can not use .MDF font files. If you do want a headline, for example, in a font that you have in MD3 but not on the PC simply set the headline in MD3 first. Then save it as an MDA on PCW in MD3. When you move it across to the PC use ViewPoint to convert it to a PCX or similar file recognizable by your PC program. LocoScript Pro and Word for

Windows both accept PCX files converted from MDAs quite happily.

Database files in .DBF format saved in dBaseII on a PCW can also be used on PC in a number of database programs although you may find it better to export your dBase .DBF data-base-file as TXT output from a dBaseII report.

Text files from both Protext and New-Word will go into Word for Windows but need editing. It is better to save them in Document mode so that they are in ASCII. Treat MD3 Editor text files as ASCII files. ASCII stands for American Standard Code for Information Interchange and is a sort of Esperanto for text files on all computers. It's like the output you would get from a typewriter: no bold, italics, fonts or point sizes, just the raw text, but at least you don't have to type it in again from scratch!

### LocoScript files

Most people will want to copy their LocoScript files on to the PC. Now there are only two PC programs which will read and understand LocoScript files directly:

LocoEasy is a simple PC program rather like Loco1 or Loco2 but it has LocoFile, LocoMail and LocoSpell built in as well. LocoEasy is a little limited and only prints in 'dot matrix' fonts but if you want to do no more than move from LocoScript on a dying PCW to LocoScript on a simple PC it is excellent.

LocoScript Professional is far superior and comes highly recommended. It is more like LS3½, lying somewhere between LS3 and LS4. It can do columns and has the same range of LX fonts but does not print in colour. Incidentally, don't even think of copying across your LX fonts to the PC. They will not work! Sorry, but...

LSPro (LocoScript Professional) will

read LS3 or earlier files but not LS4. If you do use LS4 on your PCW simply convert all your files to the LS3 type before continuing!

### Conversion Options: (1)

Using LocoScript Professional (LSPro)

Ensure that all your PCW LocoScript files have been saved with the file extension of either LS1, LS2 or LS3, e.g., Filename.LS3. You will see why this is necessary below. Your files must be named in the form such as Chapter1.LS3 or Chap\_10.LS2 because any files with a name like Document.001 will make no sense at all after conversion.

Copy all your PCW LocoScript files onto the PC in c:\PcwStuff (using either 2in1 or PCW.EXE as described above). Run LSPro. Edit the first file, say, Chapter1.LS3, but use the Edit to... option to save it as Chapter1.LSP instead, thus keeping both the original LS3 file and a new LSP file on your hard disc. LSPro must edit and save each file in its own format first before you can do anything else with it. This is why I so strongly recommend that you save it with the LSP extension.

You can, of course, save these files with any name you like but, when you are dealing with a large collection of files, you will soon be confused as to whether Document.001 is a PCW LS3 file or a PC LSPro file and whether it is a letter to the gas company or something important like your will! However, *never* use the extension .DOC or .DOT. These extensions are used by Word for Windows for its own DOCUMENT files or Template files. I suggest you save the .LSP files in the same directory, C:\PcwStuff also. This keeps all your PCW originated files in one place.

Now, while still in LSPro, select the first file, say, Chapter1.LSP. Press f9, and select *Export* and choose to save it as a *WordPerfect* file, this time with the file extension .WP, in this case Chapter1.WP. Save this .WP type file (as Chapter1.WP) in C:\My Documents (not C:\PcwStuff).

C:\MyDocuments is a directory created by Windows where most of the files that you create are normally saved automatically. By default Word for Windows will search for any document you wish to open in MyDocuments.

LSPro has a very useful facility in its Disc Manager Mode. Put the cursor over a file you wish to return to later. Then press f4=Tree. You are offered to opportunity to make a Quick Path to that file or directory. Select a number (rather like choosing where to save a block). Then navigate with the PageUp, PageDown and the Ctrl and arrow keys to C:\MyDocuments and save this with another QuickPath. Now, when you press the [End] key, you are able to switch between up to ten different directories or files but simply pressing the appropriate number, 0-9.

Learn to use this f4=Tree, Quick Path and End facility to switch between PcwStuff and MyDocuments, because Word for Windows expects to find *its* files in MyDocuments.

I will stress again how necessary it is to distinguish between the various filetypes at this stage by the use of the appropriate file extensions: Chapter1.LS3-> Chapter1.LSP-> Chapter1.WP. It is essential that you are able to differentiate between them. When you have finished converting a batch of .LS3 files to WordPerfect .WP form in LSPro, press f10 to Exit LSPro and then open Word for Windows (WinWord).

In WinWord, click File, then Open.

Ensure that Filetype is set to \*.\* , not just .DOC. If need be, click the down arrow at the right hand end of the Filetype box to show the other options available and then click on \*.\* . Now select the first file with the .WP extension which should be Chapter1.WP and press [Enter]. Word will ask: Open WordPerfect type file? Choose Yes and immediately File, Save As a Word Document, this time with the .DOC extension.

Now you have your PCW LS3 file in a Word for Windows document. I know it sounds a lot of palaver but it's quite simple once you've converted one or two. You will still need to do some work on your file but that it to be expected. The first thing you will notice is that the Font will probably be Courier if you've used a fixed pitch font on your PCW. Simply select all the text by pressing Ctrl and the 5 on the right hand number pad and change the font to, say, Times New Roman, and the point size to, say, 10 or 12.

Note, too, that a number of the signs and symbols used in LocoScript, particularly pound signs, halves and quarters, degree signs and other specials will need conversion using Find and/or Replace.

When, and only when, you are totally happy with the WinWord Chapter1.DOC you can delete the contents of C:\PcwStuff (the .LS3 and .LSP files) and the WordPerfect .WP files in MyDocuments using either File Manager or Explorer in Windows.

## Conversion Options (2):

### Rich Text Format (RTF)

Rich Text Format files are those in a higher form than mere Ascii files in that .RTF files hold not only the raw text but much of the file format such as Bold, Italic,

font style and size, page layout etc. LocoScript used to sell a CP/M program called RTF.Com which ran on the PCW. This took your LocoScript LS1 and LS2 files and converted them to Rich Text Format files on your PCW disc. These .RTF files, when copied to PC disc as above, can be read by a number of PC programs. Once in a PC program such as WinWord some editing is still necessary but you get a better result than just copying across raw Ascii files.

Note that as LS1 and LS2 normally uses fixed pitch fonts (Standard or Sans) WinWord will assume that the font is to be Courier and you will need to change this as above. You will need to do a lot more editing once in WinWord if you used the RFT path of conversion because less page information is carried across than the WordPerfect route.

### **Conversion Options (3):**

#### **ASCII**

If all else fails all PC programs, whether Windows or DOS, will read ASCII files. ASCII stands for American Standard Code of Information Exchange and is a sort of Esperanto for all computers. An ASCII file holds your text in a form rather similar to plain typewritten matter. Note that any Pound signs will come out as a hash (#) symbols and that none of the specials like half or quarter will be recognisable. I use a capital L in front of numbers instead of a pound sign if I know it will be an ASCII conversion because it is easier to spot and convert manually once in WinWord or other similar program

The conversion from LocoScript text to ASCII option was not available in the very earliest versions of LocoScript 1, but in later versions select f1, Export, Ascii. You

will be offered two types. Which you choose depends on what you are trying to copy to the PC:

#### **Page Image:**

This will give a file where the text appears exactly as typed, line by line. There will be a carriage return at the end of *every* line of text on the screen, not just at the end of sentences or paragraphs! Imagine that you have just photocopied the text. It will appear just the same as the original. Now this is OK for something like a menu and posters but not for a book where you will have to go through it line by line to remove the unwanted carriage returns.

#### **Simple ASCII:**

Select this option for almost everything. Every paragraph is carried across as a single line, hence there are far fewer carriage returns to contend with. One warning: You may lose the ends of *very* long paragraphs so look at your documents with this in mind and break up the paragraphs a bit before you convert. You can always stitch them back together once in the PC word processor.

Whether you select Page Image or Simple ASCII save the converted as either Chapter1.ASC or Chapter1.TXT (with Chap\_10.ASC or Chap\_10.TXT for longer works). Under no circumstances save them with the DOC or DOT extensions! You *must* sort out all your PCW filenames first without using any extensions of your own.

Once your files are in the ASC or TXT format then copy them as \*.TXT or \*.ASC to a DOS disc using 2in1 on the PCW or PCW.EXE on the PC. Once on the PC open up the PC program, click File, Open as before making sure that the Filetype to be selected is \*.\* and immediately save it as a .DOC file (not ASC or TXT). ●

# SO YOU WANT TO WRITE BASIC PROGRAMS?

Tel: 01484 682988 \_\_\_\_\_ Tutorial 3 \_\_\_\_\_ By Graham Swepson

At the end of my last lecture I asked you to read chapter 5/chapter 4 of the manual. Because Daniel explained the working of **FOR NEXT** loops I hope none of you were confused by the poor wording of the paragraph in Chapter 5/Chapter 4 that begins "When it executes the **FOR...**" ref 35/40. If after reading this lecture 3 you still do not understand the *principles*, not all the ramifications, of **FOR-NEXT** loops and **WHILE WEND** loops then call me at any reasonable hour on the above number.

Assuming for now that we do understand simple **FOR NEXT** loops, how about the first promised model listing that is devoid of **IF**, **THEN** and **GOTO**?

Load Basic, ref 5/1, then insert your Basic programs disc.

```
100 print:print" n\tab(20)"Sum n cubed"
110 y%=0
120 for n%=1 to 10
130 y%=y%+n%*n%*n%
140 print n%\tab(23)y%
150 next n%
```

I hope you were all able to produce this or something like it. Any program that produces the requisite columns of figures and employs **FOR NEXT** commands to operate the loop, will pass. If you were not able to write something like the above lines then type them now and follow each by **[RETURN]**.

Note that because the values of **n%** are fixed by the **FOR** statement, it is no longer necessary to put **n%=0** in line 110.

We can now **EDIT** line 30 to say our program finds the sum of the cubes to 10 by a **FOR NEXT** loop, and then save our program to disc as **SUMCUBE2.BAS**. But, Oh dear! If I **LIST** **[RETURN]** I find there are no lines 10 to 50! By worrying about that poorly worded paragraph I have forgotten to load **HEADER.BAS** first. What can I do? If I load **HEADER.BAS** now, it will displace my **FOR NEXT** program. Then I shall have to re-type it. Or I could re-type **HEADER.BAS**. This is not too bad as both my programs fragments are short. But suppose the shorter fragment were nevertheless long. Re-typing a long fragment would be more than a little tedious, never mind the risk of my making typing errors. One solution would be to save the guts of my **FOR NEXT** program (lines 100 to 150) to disc and join it to **HEADER.BAS** in **LocoScript**.

Fortunately there is an easier way. Basic comes to my aid with the **MERGE** command, ref 260/298. **MERGE**, as you might guess, merges one program with another; specifically it joins a program or fragment on disc or in Drive M: to the currently loaded program. The main thing to beware is that there are no line numbers common to the two programs. If there are, the common incoming line(s) will overwrite the common line(s) in my loaded program. But by good habit I have avoided this. So:

```
MERGE"0X:HEADER [RETURN]
```

We can now rename our program in lines 20, 30 and 40, and edit line 30 to be:

```
30 PRINT"SUMCUBE2.BAS finds the sum of the cubes to 10 by a FOR
NEXT loop."
```

We can now **RENUM**, **RUN** and **SAVE** to disc as **SUMCUBE2.BAS** (in Ascii form).

I hope you did not have too much trouble with the **WHILE WEND** loop. If you were not able to write something like the lines below then edit the above **FOR NEXT** listing so it becomes:

```
100 print:print" n"tab(20)"Sum n cubed"  
110 n%=0:y%=0  
120 while n%<10:n%=n%+1  
130 y%=y%+n%*n%*n%  
140 print n%tab(23)y%  
150 wend
```

The **WHILE** condition is that  $n\% < 10$ ; i.e. to pass through line 120,  $n\%$  can have any value up to 9, so we might suppose the loop would be bypassed as soon as  $n\%$  becomes 10. But for the loop to be bypassed the **WHILE** command must meet the broken condition. Here, the condition is broken immediately *after* the **WHILE** command. If  $n\%$  had been incremented in say, a line 142 then indeed the loop would be bypassed before the final value of  $y\%$  could be calculated and before the final values of  $n\%$  and  $y\%$  could be printed. **WHILE WEND** loops are almost invariably ended by the breaking of the **WHILE** condition and **WHILE** seeing the break, so the programmer has to ensure that the loop runs for as long as he intends. This may require careful thought. The **WHILE** condition normally breaks part way through the loop as an integral part of the instructions between the **WHILE** and the **WEND** rather than as a line that we can put where we wish. The best simulation we can make of this difficulty is to suppose we *have to* move  $n\%=n\%+1$  from line 120 to a line 142. Now we have to make the initial value of  $n\%$  equal to 1 in line 110, and the **WHILE** condition has to be **WHILE  $n\% < 11$** .

Let us rename the program and edit line 30 to change it to

```
30 PRINT"SUMCUBE3.BAS finds the sum of the cubes to 10 by a WHILE WEND loop."
```

We can now **RENUM**, **RUN** and **SAVE** the program to disc as **SUMCUBE3.BAS**.

In LocoScript we could make separate back-up documents to hold all three of these **SUMCUBE** programs separately. But really, they are all developments of a single program the function of which is to produce the sum of cubes. With less expenditure of disc space and with more ease of later comparison, we could put all three programs into one document, call the document **SUMCUBES.BAS** and print all three of these short listings on one piece of paper.

=====

I ought to talk a little about arrays. **Re-LOAD"0X:HEADER [RETURN]**. This will displace the **SUMCUBE3.BAS** program.

When I now look at the description of arrays in the manual, ref 27/24, the explanation seems clear enough but I remember having difficulty with them when I was learning Basic.

Arrays are a means of holding variables of the same type that are associated in some way. Arrays are available for the four types of variable: integer, single precision, double precision and string. Unless the array is small (fewer than 10 elements) Basic likes to be told in advance of an array's use, ref 28/25, i.e. the array's name, type (**%**, **!**, **#**, or **\$**), and how many elements (numbers or strings) we want it to hold. This notice is given by the **DIM** command. Variables in an array all have the same name but we gain access to any particular variable (an array element) by quoting its index number, 0 to 10 in the forthcoming example. Let us therefore **DIM**ension an integer array named **Hole%** with 10 elements:

```
100 dim Hole%(10)
```

This dimensioning actually gives us 11 elements because unless we alter the system we always

get a zero Hole%, Hole%(0).

Some time ago I invented the problem of finding the sum of the cubes from 1 to 10 as a mental exercise to check how capacious is human short term memory. The strategy used in the **SUMCUBE** programs is less demanding of memory space than is the alternative I am going to suggest now. I challenged a friend, and he stumbled by forgetting the sum of the cubes to 8 while he was calculating the cube of 9. We were both made aware of how tiny is our short term memory when I pointed out that he would have completed the calculation faultlessly if I had allowed him a pen and a paper the size of a postage stamp!

He challenged me. I got to 3025 OK but I cheated by using a different strategy. When I was at school my maths teacher required us to commit to (long term) memory the squares of the numbers from 1 to 20 and the cubes of numbers from 1 to 10. This allows the different strategy, as I merely had to pull out of long term memory each cube in turn and add it to the sum of previous cubes. We can do the same in Basic by employing an array.

Imagine a row of pigeon holes numbered sequentially from 0 to 10. Into holes 1 to 10 we put a piece of paper bearing a number. In this particular case we arrange for each piece of paper to bear the cube of the number of its hole (the index number). Working out each cube and putting the papers into the correct holes is analogous to myself committing the cubes to memory as a schoolboy.

```
200 for x%=10 to 1 step-1
300 Hole%(x%)=x%*x%*x%
400 next x%
```

Now that we are grown up we merely add the elements together:

```
500 for x%=1 to 10
600 Hole%(0)=Hole%(0)+Hole%(x%)
700 next x%
800 print"The sum of the cubes to 10 ="Hole%(0)
```

True, this gives us only the final sum of cubes rather than the intermediate totals but the final sum was the original challenge. If we want the intermediate totals we add line 620:

```
620 print x%tab(23)Hole%(0)
```

Rename the program and edit line 30 to read:

```
30 PRINT"ARRAYSUM.BAS finds the sum of the cubes to 10 by storing the cubes in an array."
RENUM, RUN and SAVE this program to disc as ARRAYSUM.BAS
```

Did line 200 make you blink? Line 200 should normally be the same as line 500 but I wanted to show you that a **FOR NEXT** loop can run down as well as up. Normally in a **FOR NEXT** loop, the step is implicitly +1 but if you change the limits appropriately and make the step explicit, you can make the step any number you wish. Of course, if you make the step non-integral, then x% will have to become x!. See ref 222/261.

If we want to use the Hole% array again at a later time in a longer program, just as we would zero any accumulating variables before we used them again, so it would be wise to zero the contents of Hole%( ) before we used the array again. The obvious way to do this would be

```
2000 for x%=0 to 10
2100 Hole%(x%)=0
2200 next x%
```

but it is usually simpler to dispense with Hole%( ) and start again:

```
2000 erase Hole%:dim Hole%(10)
```

Newly dimensioned arrays are always empty. Note though that if no element of `Hole%` will later accumulate value (as `Hole%(0)` accumulates value in the above program) then the values within the elements can be re-assigned with impunity, just like any other variable.

A program itself can have a modest amount of data written into it in so-called data lines. A frequent use of arrays is to accept data from a data line by the `DATA READ` process, refs 28/25, 193/231, 299/338.

#### Re-LOAD"OX:HEADER [RETURN]

Often you will have more than one lot of data to be so stored. In this case you should store them on separate lines. In spite of this good practice Basic keeps all data in a single list that can be read in sequence, so do be sure that in each reading your program does not read short of, or beyond, the end of the line you intend it to read. To reduce the consequences of short or long reading, your program can direct the `READING` of data from the data line you intend by the `RESTORE` command, which I recommend should precede each reading of a data line. For example:

```
100 dim Fib%(20):dim Fib$(20):dim Gosp$(4)

1000 restore 10020:for x%=1 to 4:read Gosp$(x%):next x%

1500 restore 10010:for x%=1 to 12:read Fib$(x%):next x%

2000 restore 10010:x%=0:while Fib%(x%)<144:x%=x%+1:read Fib%(x%):wend

10000 end
10010 data 1,1,2,3,5,8,13,21,34,55,89,144
10020 data "Matthew","Mark","Luke","John"
```

Here the data lines are lines 10010 and 10020. Note that in these readings the lines are not read in line number sequence. It is assumed by the manual, ref 305/343, that the data lines of a program will be numbered in the sequence in which the program will read them, and that `RESTORE` will be used merely 'to move the internal pointer... typically back to the first `DATA` statement' presumably for a re-read of the first data line. But if you use the `RESTORE` command as I have suggested, the program will read lines of data in the order that *you* intend. When writing a program it is relatively easy to write each `RESTORE` and `READ` command in such lines as 1000, 1500 and 2000 and to write the corresponding data line at the same time. If you do not do this, you will have to make sure you get all the data lines in the line number sequence in which you want the program to read them, which can be tedious and tricky.

Some notes on data:

- 1) Data lines are often put at the end of a program. Make sure the running of the program ends (as in line 10000) before it runs onto the data lines.
- 2) Quote marks surrounding data items are often used but are not normally necessary. Quotes are necessary if the data are to contain commas. If the data are to *contain* quote marks then these must be expressed as `CHR$(34)`.
- 3) Numbers, quoted or not, can be read into string arrays as in line 1500.

I have used both `FOR NEXT` and `WHILE WEND` loops to illustrate the `READ` process. Be cautious if you use a `WHILE WEND` loop to read numbers into strings. Numbers in strings behave in an odd way that makes the `WHILE` condition difficult to specify. But if you feel brave, have a go and try



to find at least the nature of the difficulty. We shall return to this difficulty when we come to examine programs that sort string arrays.

If you want to inspect the data that have been read, add the lines

```
4000 for a%=1 to 4:print Gosp$(a%) " ";next a%:print:print
4010 print"Numbers":for a%=1 to x%:print Fib$(a%);;next a%:print
4020 print:print"Strings ":for a%=1 to x%:print Fib$(a%) " ";next a%
```

Change the program name to READDATA.BAS and edit line 30 to read

```
30 print"READDATA.BAS reads data from data lines."
```

Then SAVE the program to disc.

=====

Before we leave integers, I want you to investigate integer division and the MOD function, ref 47/53. That ref tells you what 7 MOD 2 is, but what are 2 MOD 7, -7 MOD 2 and -2 MOD 7?

Note that these functions work only for integers, i.e. whole numbers between -32768 and +32767. You obtain / in LocoScript 2 (and maybe in other LocoScripts) by [ALT] with [÷] and in Basic by [EXTRA] with [÷] twice. Yes, [÷] twice! Enter your findings and this keying information onto the space near ref 47/53.

These two functions are a bit of shorthand. If you want to employ the same ideas for numbers outside the integer range you have to do the obvious operations; e.g.

```
x!=1000000:a!=INT(x!/60)
```

will give a!=16666, a type of integer division, because INT chops off any decimal part. You obtain the equivalent of MOD by

```
b!=x!-60*a!
```

The obvious direct equivalent to MOD is

```
b!=(x!/60-INT(x!/60))*60,
```

but this is subject to the errors that arise from multiplying the small difference between two large numbers. Try it. In this case, because we know b! cannot be greater than 60, we could equate b%, rather than b!, to the above expression. b% would round the answer to the nearest whole number and so remove any small error, but we risk making an integer-size error. Another, accurate, but very long-winded, method is to use a WHILE WEND loop:

```
a!=0:while x!>59:x!=x!-60:a!=a!+1:wend:b%=x!
```

a! counts the number of subtractions. b% is what is left over.

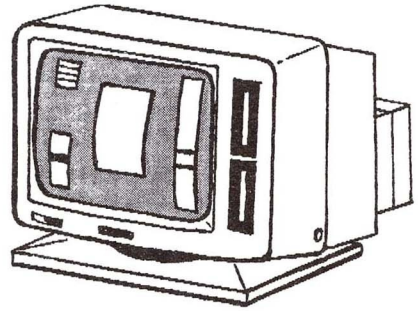
=====

If I still have a bit of space available in this lecture I should like to draw your attention to a difficulty I had with IF and ON when I was learning Basic, see ref 38/42. My difficulty was not so much with the manual's explanation of the IF THEN ELSE or the ON GOTO as such but with the line numbers associated with these conditional commands; i.e. line 1, line 2, line 3 etc. These are line numbers in a program but they are not line 1, line 2, line 3 etc. They are the 1st line number in the list of line numbers, the 2nd line number in the list of line numbers, the 3rd line number in the list of line numbers, etc. For example, if x% could have values of 1, 2, 3 or 4 and we have:

```
ON x% GOTO 290,470,350,310
```

then line 1=line 290, line 2=line 470, line 3=line 350, line 4=line 310. I hope this clarifies.

# Screen Scene All Change



Recently I decided to see if you could exchange screens between the PCW8256/8512, (green monitor) and the PCW9512/+, (black and white monitor). My reason for attempting this wasn't so much for preference of colour, (though in your case it could be) but for cosmetic reasons.

For some reason I have found that many of the PCW9512/+ screens seem to have varying degrees of bad scratches or screen burn, which if like me you take pride in the appearance of your PCW can be very annoying; however most PCW8256/8512 green screens I have seen have been in good condition.

If you have already replaced a disk drive belt on your PCW, and feel confident about tinkering inside your monitor, there's nothing hard about swapping screens, but you will have to strip the monitors down to obtain access to the screens.

Again as in my previous article 'Keeping your Amstrad Running' if you need either an identical replacement screen, or the alternative colour screen, the best place to pick one up cheap is at a car boot sale, market, or ads in papers such as Loot, (this is of course if you

haven't already got both types of monitors).

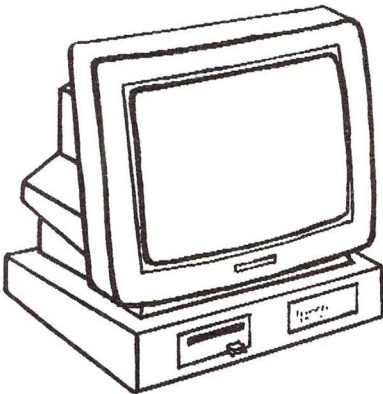
**SAFETY FIRST!** Before attempting this modification unplug the monitor and leave it for at least an hour or preferably overnight.

You don't need any special equipment although an extra long shaft Phillips screwdriver will make life easier.

The connections between both screens and their respective power supply boards are identical, the only problem to overcome is that the black rubber connector that goes between the power supply board and the screen is on the opposite side of each respective power supply board. To overcome this it is best to remove the screen coil/s which are held in place on the back of the tubes by a clamp, Phillips type screw and nut, and transfer them to the opposite screens before retightening the screw and clamp.

You could of course leave the original scan coil on the original tube, but you would have to rotate the coil 180 degrees in order for the rubber connector to reach between the tube and the power supply board, (if you didn't rotate the coil, when fitted you would find that your picture is upside down). I tried this and although it worked when I switched on I found that the picture was curved; this was cured by simply swapping the coils between tubes.

To give an example of what's just been described, let's say you want a green screen in your PCW9512/+. Look at the layout first with its original black and white screen fitted,



then, when you put the green screen in, all you have really done is to turn the green tube through 180 degrees from its original position in the PCW8512 casing, plus you have transferred the black and white tubes scan coil to the green tube. Confused? If so, give me a call.

So now I have a PCW8512 with a black and white screen, and a PCW9512 with a green screen. The only annoying thing is that even fellow Amstrad PCW owners that have visited me, haven't even noticed the difference; is that good or bad? It just goes to show you how observant people are. If you would like more

details or help on this subject feel free to call me. (*at reasonable hours*)

Roy Blake Tel: 020 7622 4529

*Editor's Note:* Having carried out a few modifications myself and I'm sure Roy's correct in suggesting that swapping the screens is a minor operation. However this article has been published on the strict understanding that The British Amstrad PCW Club, or any members thereof, will not be held responsible for any personal injury, equipment failure or destruction should you decide to follow the above instructions.

## A Fault Cured?

---

My main PCW 8512, which has had a lot of use, developed an intermittent fault. At various times when loaded with LocoScript, or when loading was in progress, the display or loading routine would suddenly freeze into the form of a fixed pattern or one of several fixed patterns. Occasionally the pattern would flip from one to another. The most frequent pattern consisted of four bright rows and five and a half bright columns, so giving squares about two inches across, each of which was filled with a much finer fixed pattern. The impression given was that the digital circuits had gone into various modes of oscillation. None of the keyboard keys had any effect on these patterns, not even the [SHIFT] [EXTRA] [EXIT] combination. Another odd feature was that the [SHIFT LOCK] key was lit and could not be quenched. I could only switch off and reload.

I have another 8512 and by dint of interchanging units I tied the fault down to the horizontal printed circuit board. This board carries the power supplies. I found I could bring the fault on by slapping the PCW case, and by doing this while monitoring the 5 volt

and 12 volt stabilised lines simultaneously I found these voltages were dipping down momentarily and simultaneously. Further exploration with the oscilloscope showed that the alternating voltages applied to the rectifier diodes were behaving similarly. Plainly there was a fault common to the two supplies.

An obvious point to monitor was the voltage on the mains rectifier reservoir capacitor, C5005. The connections to C5005 are not accessible while on power so I soldered a pair of wires to the terminals and brought them out to a tag block. On powering, the a.c. and d.c. voltages across C5005 were normal and steady and not susceptible to slapping the PCW case. But then neither were the screen display or the 5 and 12 volt supplies now susceptible.

That was on 22nd October. The fault has not recurred since then. I cannot see what I have done but it seems likely that my soldering has disturbed either a poor connection within C5005 or a hair-line crack in the connections to it.

Graham Swepson.

# PCW Today ON-LINE

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