

*THE BEST CPC MAGAZINE AND  
PREMIER CPC CLUB*

ISSUE 117

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1997



Is it a bird? Is it a plane?  
No it's Santa Claus again.

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## WACCI

*the world's best CPC magazine and premier user group*

### The Club

**Chairman:** Doug Webb, 4, Lindsay Drive, Chorley, Lancashire PR7 2QL  
Tel: 01257 411421

**Publicity Officer:** Brian Watson, Harrowden, 39, High Street, Sutton, Ely,  
Cambs CB6 2RA Tel: 01353 777006

### The Magazine

**Editor:** John Bowley, 97, Tarrington, Bretton, Peterborough, PE3 9XT,  
Tel: 01733 702158

**Assistant:** Ron Izett, He will be when I got something to send to him.

**Fair Comment:** c/o Frank Neatherway, 3, Glebe Close, Rayleigh, Essex,  
SS6 9HL

**Market Stall:** Angie Hardwick, 23 Station Place, Bloxwich, Walsall, West  
Midlands, WS3 2PH Tel: 01922 449730

**Roving Reporter:** Angela Cook, Brympton Cottage, Brunswick Road,  
Worthing, West Sussex, BN11 3NQ Tel: 01903 206739

**Wish List:** Ernie Ruddick, 26 Spitalfields, Yarm, Cleveland, TS15 9HJ  
Tel: 01642 898091

**Front Cover:** by me I'm afraid.

### Benefits of Membership

- \* The best magazine for serious CPC users.
- \* Index covering issues 1-104, soon to be updated.
- \* Telephone helpline (indispensable)
- \* Bargain buys/wanted list from Market Stall.
- \* Discount off goods from advertisers.
- \* List of PD discs, tapes, library books and services.
- \* Above all the advice, assistance and friendship from other WACCI members. *Benefit List: by Ernie Ruddick*

### WACCI ON WEB

Matthew Phillips.  
The URL, is:  
<http://users.ox.ac.uk/~chri0264/wowwww.html>

### CLUB EMAIL

John Bowley  
The post room is:  
[jcbowley@aol.com](mailto:jcbowley@aol.com)

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### Production Method

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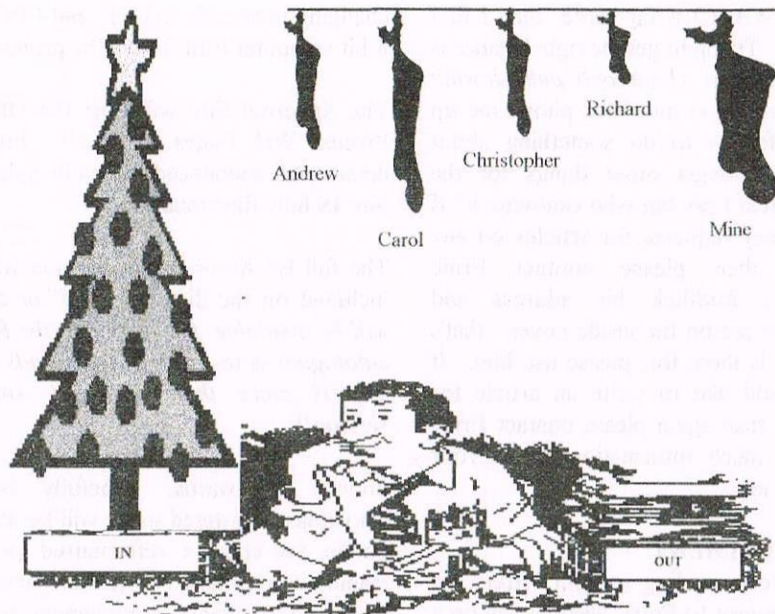
## WACCI

Edited By: *John Bowley*  
Owned By: *The Club Members*  
Chairman: *Doug Webb*

Conceived and Founded  
By: *Jeff Walker*  
In: *October 1986*

Developed and Expanded by:  
*Steve Williams, Clive Bellaby*  
*Paul Dwerryhouse and*  
*Philip (Tigger) DiRichleau*

Copy Date: *31 December 1997*  
Membership: *268*



*Hi everybody and welcome to another late WACCI - WACCI is brought to you with sweat, coffee spills and loads of headaches. No seriously its not that bad. This issue is for November and December and we'll be back again in January. That doesn't mean that all of WACCI is closing down for Xmas. The PD Library is still open for your orders.*

### WACCI LATE AGAIN, BUT WHY?

You couldn't fail to miss that over the last few months WACCI has been getting later and later dropping through your letter boxes. No-one is more upset about your WACCI being late than me, I try my best, but if I don't get enough articles what else can I do? Over the last few months I've been feeling really down, (*WACCI being late, family problems and many sleepless nights and others*) so much in fact that I even started doubting my abilities in producing your magazine for you (*but not anymore I feel happy about the future*) and yes! I felt I've also let you all down badly.

Perhaps considering my track record to date, it might be in WACCI's interest that I did resign and let someone else take over.

WACCI is not a one man show and it needs members input to enable it to survive.

### WHAT ANOTHER DOUBLE ISSUE?

After my plea for articles last month and the month before I'm pleased to say that you the members have come through with flying colours, thanks to you all.

However please don't think because I'm taking a Xmas holiday (*which I need to get my act into gear*) you can! Still keep those articles coming.

Because of this, I for the first time, feel very confident that the tale of the "*late*

*issue saga*" will be a thing of the past.

I cannot change the past and only hope that you the members will continue to give me your support. For the very first time since editing WACCI I've got articles left over to carry over to the next issue, which makes my job a lot easier I can tell you.

### THE FUTURE

In January things in WACCI are changing and in my opinion for the best, my workload is being reduced so much that I will be able to spend more time on editing the magazine and get it out to you on a more regular basis, which can only be for the better. More news about the changes in the January issue.

### PHILIP DIRICHLEAU

Editor of Euro-WACCI has decided to stand down doing Fair Comment. He will be greatly missed within the pages of WACCI. His flair and style is second to none and I wish him the very best of luck for the future. I'm very sure we will hear from Philip again.

### WHO IS GOING TO DO FAIR COMMENT NOW?

A new Fair Comment editor has already been found and I'm sure you all want to know who it is! But I'm not going to tell you, you're going to have to wait until January to find out. Ain't I a rotter?

### SPECIAL THANKS

This must go to all those who have been busy writing articles for WACCI, keep up the good work.

### SUPPLEMENT DISC

At present I have a WACCI member working his socks off to make a disc supplement for you. I've already seen a beta version and it looks good. This supplement disc will cover all that the paper one did except for the Book Library (*which is been closed down for a re-vamp*)

The Book Library doesn't get used much, the only request I've received over the last six months was from Gordon Kewley and he wanted a service manual, but I'm sad to say that the last person who borrowed the service manual did not return it. Being fair to that member when I telephone him. He was very upset, because he sent it back to me ages ago, so it must have got lost in the post. Sadly he didn't get a certificate of posting, so there is nothing we can do about it.

This disk will be free to members, but there is a catch I'm afraid, you will have to supply your own disk and a SAE for its return. More details when the disk is ready.



## EDITING WACCI IS HARD

Editing WACCI is far harder than I first thought. Trying to get the right balance is near impossible, (*I can only publish what I receive*) some members phone me up asking for us to do something about Comms amongst other things for the CPC, great I say but who can/write it? If you've any requests for articles on any subject then please contact Ernie (*wishlist*) Ruddick his address and telephone are on the inside cover, that's what he is there for, please use him. If you would like to write an article for WACCI then again please contact Ernie with as much information about your interests etc..

## FAIR COMMENT

Please keep sending in your letters for Fair Comment to Frank Neatherway on a 3.5 or a 3" disk please, Frank is very quick in returning disks, not like myself, so therefore if you write an article and you need your disk back quickly then please send that to Frank also enclosing a SAE for its return.

## STOP PRESS STOP PRESS

From 1st December 1997, CP/M Maxam is going Shareware. This "**best of all 8-bit assemblers**" will be available via Brian Watson as a Robot Software title for a fiver.

The reason there is ANY cost involved is because, as a Robot Software title, user support from Richard Fairhurst is included. Other libraries/clubs may apply to include it among their titles but permission will not necessarily automatically be granted.

The version supplied will not necessarily include all the features available through Robot Software. Copyright is reserved on CP/M Maxam and all WACCO Software.

### Versions will be available to run on:

- 1) any CPC with 128k of memory (*and will be supplied self-booting \*WITH CPM\**),
- 2) any PCW/PcW except the PcW16 (*and NOT supplied self-booting*), and 3) as .DSK files to work under a CPC or PCW emulator on a PC or Mac.

The .DSK version will also be downloadable from the Spheroid Web Site which should be fully functional by

early December. The Spheroid Site is changing drastically in look, and CPC and 8-bit computer features will be prominent.

The Spheroid Site will host the Official Protex Web Pages (*at last!*). Further details will announced once the Spheroid Site **IS** fully functional.

The full Ex-Arnor documentation will be included on the discs (3", 3.5", or 5.25" *will be available, full details in the Robot catalogue*) as text files (*there's loads of it: MUCH more than with the Amsdos version!*)

Shortly afterwards, hopefully before Christmas, registered users will be able to obtain (*at cost*) a reformatted printed manual in a durable A4 lie-flat manual. A really good quality complement to the program, but optional.

It is hoped the "**all-in**" cost will be less than ten pounds; a bargain for those who don't fancy reformatting all the text files themselves.

Once the program is released as Shareware, it is hoped to assemble a team of programmers who will be given access to the source code to resume further development of the program as an "**in-house**" project.

There seem to be some slight enhancements possible, no program is really ever complete, and it makes no sense to have these new features added in a methodical way and properly documented.

This is a major release, and \*only the first in a series planned for release through 1998\*. It is going to be a very exciting year for CPC software and the way it is handled in future.

Further details (*and a Robot Software catalogue*) are available for an A4 SAE to Brian Watson at the usual address.

**PRESS RELEASE:** Dated 22nd Nov 97  
With Rob Scott deciding to leave the CPC scene with immediate effect, Parados upgrades carts are withdrawn and the recently announced enhanced version of Parados on ROM is **no** longer available.

Both are still products covered by UK copyright law and must not be distributed without the express permission of the copyright holder.

## AVAILABLE TO BUY

Stephen Potts telephone me recently and ask if I would put an advert into WACCI regarding some items he has for sale:

- |                   |       |
|-------------------|-------|
| 1) 3" Drive Belts | £1.25 |
| 2) Widgets        | £4.50 |

*Stephen Potts, address is:*

85 Thorold Avenue,  
Cranwell Village,  
Lincolnshire,  
NG34 8DS,  
Tele: 01400 261839

Please also include a 31p stamp towards postage.

## HAPPY CHRISTMAS

From: Doug Webb, Frank Neatherway, Frank Frost, Angie Hardwick, and of course Myself.



### NEXT COPY DATE

Please please keep sending your articles to me. Over the Christmas break I will be very busy laying out pages for the magazine and since I've already have several articles to be getting on with. I now feel we can get back to a more regular monthly time scale.

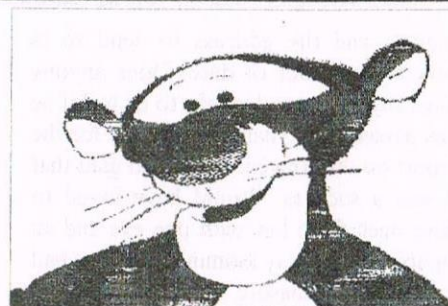
WACCI will going to the printers at the earliest possible date in January so therefore you should receive your next issue early in January.

*John*



# Fair Comment

## with Philip DiRichleau



Farewell from Tigger

write c/o Frank Neatherway, 3 Glebe Close, Rayleigh, Essex. SS6 9HL

Dear Philip,  
I heard about your resignation this evening (from you actually).

Concentrating on strengthening Euro-WACCI I see as well suited to you. Good luck with it.

### MEGABLASTERS FOR FREE

Jonty got something a tad skew whiff in his MegaBlasters review a few issues back. If people have an old MegaBlasters and want the slightly less bugged version, there is no charge. All they have to do is send the original discs to me (*Radical*) and enclose an SSAE. My address is at the front of the magazine.

### ANGELA RESPONDS FOR BTL

Now to Ron Izett's letter of last issue. There are several points that annoy me. Ron says that he had "written to and received replies from both of the parties involved" after Paul's resignation. He did not write to any member of BTL about the situation we all found ourselves in. So how could he be "cognisant with all the facts"?

Ron also says: "Perhaps it would be helpful if BTL were to withdraw all contact with WACCI for the time being." He adds: "I do realise that there are members with a foot in both camps, which might cause a difficulty." What difficulty? WACCI is struggling with articles and workload help as it is. If all BTL writers withdrew from WACCI, it wouldn't get produced at all. I am sick to death of people accusing BTL of things they know little or nothing about.

Regardless of people's personal views on the content and style of the disczine or the people that produce it, those writers have done an awful lot more for the running of WACCI than a lot of it's members have. What vexes me beyond all belief is Ron stating: "Rest assured that

*any copy that comes to me for layout containing foul language or unnecessary expletives will be rigorously edited."* As any good writer knows, every publication has it's own house style. The writer must work to that style. To my knowledge no BTL writer has ever written an article for WACCI containing swearing. Nor will we. The majority of BTL scribes, either now or in the past, write professionally and I consider this a great insult to our craft.

People seem to be inventing a problem that simply does not exist. WACCI and BTL are not and have never been at war.

A few people like to speculate that there is friction between the two establishments. BTL and WACCI are just two different publications produced for wholly different reasons and for completely different audiences. Both WACCI and BTL have readers that dislike the other, but there are a great deal that like both. So let's all shut up, get on with producing two good publications and find those "happier times" Ron, and we all, would like to see.

Kind regards  
Angela

<<Thanks for your views Angela, they are always welcome, as are everyone elses. I wonder what the next Fair Comment Editor is going to make of all this. It will be most interesting -Philip>>

<<Hi Angela, Ron Izett suggestion that all BTL writers should withdraw from within the pages of WACCI were only meant as a way of stopping matters getting worse. As you know WACCI needs the input from all members of the CPC groups here and overseas if WACCI is to survive. Yes it is true that articles have been thin on the ground of late and I will

always welcome articles from you and Richard Fairhurst. In fact Richard has already submitted two articles of good quality and they will be published soon.

Like your good self, your articles are always very welcome.

Any Editor worth his salts would make sure that any articles or letters that are submitted would be edited and if any foul language or bad remarks (which may cause any offence or harm to anyone) were found they would be removed regardless to who ever sent them in for publication.-John>>

### A CHINK IN PARADOS

Dear Philip,  
Sorry to read about the spat in issue 116 between certain members. As a mere WACCI user I haven't a clue about what's going on so cannot comment. I can only express the hope that it will blow over and peace will break out. I have always found that Beta Blockers help to keep the peace. These are little pink pills much beloved by snooker players, so I am told.

They help the players keep their nerve during championship matches and stay calm. Nuff said. On to other more interesting things.

I wonder if I have found a chink in the wonderful Parados. I can't seem to erase files in the B: drive when using Protex. I had a similar problem with Romdos which WACCI members solved for my. It was simply a question of putting RomDos in a lower number than Utopia in the rombox. This trick doesn't work with ParaDos. Anyone got any comments?

### WHERE IS FACE HUGGER?

Secondly, I have been playing with Doscopy and I note that it is shareware and a gentleman by the name of Face Hugger would like some money. The



request and the address to send to is several years out of date. Does anyone have any advice and is help to be had if he has passed on? Thanks to Angela for the report on the convention and so glad that it was a success. Would have loved to have been there but with one eye and an eighty first birthday looming up I have had to forego the pleasure.

Finally, about the PC page. I'm all for it. I had one a few years back. All I need a computer for is word processing, a spreadsheet and a database and I found the PC so slow compared to the CPC that I gave the PC away. Never the less, I have a general interest in computer matters and I find the run-of-the-mill computer magazines so stuffy compared to WACCI.

A big thank you to John Bowley for stepping into the Editor's chair and the rest of the stalwarts for their loyalty and contributions.

*Ron Hobday*  
Bedford

<<I've never had a problem with ProText and ParaDos misbehaving in such a way. Odd or what? It might be down to a different ROM than those you suggested, interfering with them. You haven't still got RomDos fitted, as well as ParaDos have you? Doscropy? No idea. However, quite a few WACCI members now use it on a regular basis, so just write to Fair Comment and someone is sure to answer.

Editing WACCI is far from easy. Unless you've done it, no one has the slightest idea just what pressure is put on the Editor. John deserves all the credit he gets -Philip>>

<<Hi Ron, I'll try and find his present address and print it in January issue okay.-John>>

#### MARK JOHNSON RETURNS

Dear John and Philip,

It has been over a year now since I last wrote to fair comment (*Issue 103 - August 1996*) and I decided that it is about time that I wrote again. The other main reason is that I wanted to send off this disc with an article on it to John in time for the copy date. A lot has gone on since I last wrote, so I will try and keep this letter brief. I agree with most of your answer Philip to Ron Izett's letter in issue 116. What we do without the likes of Angela Cook, Richard Fairhurst etc and indeed your good self if banned from the hallowed pages of WACCI? Put simply, the magazine would reduce in size (which

people would complain about), the group would probably lose even more members and then fold. A frightening thought. John, Carol, Ron, Doug, Angie, Frank Neatherway, Angela and of course yourself put a lot of hard work, time and effort into WACCI each month. It would be a shame to see it all go down the pan due to a few hurtful and spiteful remarks made by some people. Conversations between WACCI Officers and BTL members and also other people is their business and theirs alone.

I just wish the whole horrible business would stop, as it is stifling and spoiling the WACCI I know and love. Please note, the above comments/opinions are MY OWN personal ones. I hope that have not offended anyone, as it was not my intention to do so.

With regard to the PC problem page. I cannot say that I totally agree with having one in the magazine, but as it will be on a bi-monthly basis, I think that I can cope with it. There was a time when the PCW did get some coverage here and there.

Therefore I do not see a problem with the PCW version of Route-Planner getting a review in WACCI. Having said that, I realise that times have changed and things have moved on. If the club and the magazine were to become multi-format, I would like to suggest that it should cater for the CPC and PCW range of computers and the PC. The coverage in the magazine for the PC should be limited, as WACCI was always intended to be a CPC club and magazine. This would hopefully boost membership levels and thus secure the clubs financial future.

We could even open up a PC PD library. The reason that I have not included any of the other 8-bit computers is that they are already covered well by Brian Watson's 8-Bit magazine.

Well that is it as I am sure that I have bored you all to tears by now. As I said before, these are only my ideas, but I would appreciate some feed back from the committee and other club members.

Best wishes  
*Mark Johnson*  
Corringham

<<On a purely personal level, I'm against including PC coverage in WACCI purely because WACCI is a CPC magazine. I don't think having PC

coverage will increase membership, it doesn't work that way, but it might just prevent a few members from leaving.

I'm also just cynical enough to believe that it would take every page of every WACCI for the next six months just to answer some of the questions that I know are going to land, like, for instance, how do you turn the machine on, how do you turn it off, and is it ecologically unsound to throw the thing into the nearest river.

Saying that, if it's what the WACCI membership wants, then it's what the WACCI membership shall get...  
Philip>>

<<Hi Mark, Nice to hear from you again. First - your point about matters regarding BTL etc, I agree with you completely its got out of hand and so it should stop forthwith.

Articles and letters on the CPC will always get top billing in WACCI after all WACCI is a magazine and club for the CPC. -John>>

#### PETER ANSWERS NORA LEES

Dear Philip, Just a quick note regarding Nora Lees letter WACCI 116. I presume it was a small oversight that she didn't get an answer to her query. So if I may, I offer the following as a solution to her problem. If only the answer is required at the printer then ?#8, before the calculation will send the answer to the printer. However if the complete calculation is required then ?#8," calculation =" ; calculation will give the required result, eg :- ?#8,21.5+15.25-12.25 will give the answer at the printer 24.5. ?#8,"21.5+15.25-12.25 =" , 21.5+15.25- 12.25 will result in the printer output of 21.5+15.25-12.25 = 24.5 (providing the printer is on-line). Note the comma after the #8 and the semi-colon in the second example. I hope the above is of help to Nora.

All the best  
*Peter Robson*

<<The first time I saw that letter was when it appeared in WACCI. Sorry about that. What a minute, this next was is from you as well...-Philip>>

<<No Peter it was me that didn't answer Nora Lees letter, but at least it got you and others writing -John>>

#### DOES IT REALLY MATTER?

Dear John,

Just an opinion on the current controversy about rumoured takeover



bids etc. It does not matter to me what other interests contributors to, or officers of WACCI have as long as they continue to enable the club and magazine to provide me with the interest and inspiration for my chosen hobby. It is inevitable that the most able CPC enthusiasts will belong to other groups (*be it BTL, The Monster Raving Loony Party or whatever*) so to prohibit anyone from contributing on this basis would be detrimental to our clubs well-being. As long as the club continues in the general manner it has up to now I will support it.

The PC problem page is probably a good idea, although of no interest to me now or the foreseeable future, I can imagine it may help to retain members who have "*upgraded*" and save the valuable combined knowledge and expertise for the benefit of relative newcomers like myself.

*Peter Robson*  
Oldham

<<Your comments are noted -Philip>>

<<Hi Peter, I agree with you, it would be wrong to exclude anyone from within the pages of WACCI just because they belonged to another group. -John>>

#### AGGRIEVED PARTIES

Dear Philip,  
How right you are to state that Paul's resignation has been a messy business. Nobody regrets Paul's decision to resign more than myself and I am sure the club will surely miss his unselfish and whole-hearted support in the future.

As for those aggrieved parties that Ron Izett mentions in his letter who he suggests should withdraw and reflect awhile. I am not sure who he thinks they may be but together with John we were possibly more involved with Paul during this business than anyone else, and both John and I together with the other members of the committee were all deeply aggrieved by Paul's stubborn insistence to resign. As for those rumours that circulated around, the only person that contacted me was Ron Izett who made similar comments to those he expressed within Issue 116.

As for BTL making an intrusion into WACCI, may I put on record that whereas all of the committee did not enjoy the use of bad language found within the

BTL disczines, they considered that the club members should be left to decide for themselves what they may wish to read.

We welcome all talented persons within the ranks of WACCI and if they write for and help to produce BTL, they, like many other WACCI members actively endeavour to further both the existence and interest in the CPC.

I quite agree when you state that comments made on Internet between people are NO business of WACCI and should not be allowed to harm the good name of WACCI. That is exactly the opinion that your committee expressed. Collectively we will always strive to maintain the lovely friendly atmosphere that so epitomises WACCI's existence.

May it remain that way for as long as possible, we are very confident that it will survive from the comments members made during conversations I had with them at the 1997 Convention.

Finally may I clearly state that no individual forced Paul to resign, it was his decision, a decision no single member of the committee could persuade him to retract. We all wish that he would as Ron suggests reflect upon this drastic action he took and consider rejoining, his return would be most welcome.

With issue No 116 containing no less than twenty-one photos it could well have been renamed WACCI Illustrated.

May I enquire as to who is the faceless person in the photo with my name beneath it? The nine pages concerning the 97 convention made for interesting reading, many thanks to those members who contributed to the effort.

Even though I spent most of that day copying PD discs I did have many enjoyable conversations with members which once again enabled me to put faces to names. See you all again next year?

*Doug Webb*  
Chorley

<<Hi Doug, WACCI Illustrated! I admit that there was a lot of pictures of the convention in issue 116, but this was only to show what members missed who couldn't get there for one reason or another, personally I didn't think the pictures came out that badly a little bit bright I agree, but I'm glad you enjoyed reading it. -John>>

#### HOW TO CLEAN YOUR KEYBOARD

Dear Philip,

I see from issue 116 that Michael Briscoe is having a bit of trouble with his keyboard; namely, keys not working. I had this problem a couple of years ago, so I thought you (*and Michael*) might be interested in my solution to the problem.

If cleaning the keyboard (*as described in issue 116*) doesn't help, then it could be that the contact pads on the keyboard membrane have become oxidised; this is the problem I had.

First of all, remove the screws holding the two halves of the keyboard case together (*and the two at disk-drive end*) and open-up the case.

Next, remove the three screws at the back of the keyboard block; this will free the block from the case. You can unplug the membrane if you want, but it isn't absolutely necessary. The plastic tabs on the back of the block can now be pressed apart to release the metal backplate.

The keyboard block will now be in three parts: the metal backplate, the plastic membrane, and the panel containing the keys themselves.

The membrane consists of two sheets of plastic with conductive pads on the inner faces, which complete a circuit when they are pressed together by a key. If the surfaces of these pads become oxidised, then the oxide will insulate the pads, thus preventing the keyboard from working properly.

The next step depends upon how badly affected the pads are. If the problem has only just started then you could try gripping the membrane between finger and thumb, exactly over the dodgy pads, and slide the pads backwards and forwards across each other several times.

This worked for one of my keys, but the other one must have been more heavily oxidised, as it made no difference. So, the next thing to do is to open-up the membrane. Just peel-apart the two plastic layers somewhere close to the offending pads (*a small modelling knife may be useful here*) enough to get a jewellers screwdriver in.

Hold the screwdriver so that just one corner of the blade is in contact with one of the pads, then, with little or no pressure on the pad, move the blade of the screwdriver from side to side across the surface of the pad. Start with the blade positioned at the side of the pad furthest



from you, and gradually draw the blade towards you as you move it from side to side. Don't push the blade, or it might dig into the pad and damage it.

The pad should now look slightly brighter than it did before. All you need to do now is to repeat the process for the other pad, then press the edges of the membranes back together again (*although it doesn't really matter if they don't stick together again, provided you have only separated a couple of inches of it*).

That's all there is to it! This cured my keys a couple of years ago and they've been working ever since with no more problems. I used a jewellers screwdriver (*a fairly small size*) because they have quite sharp blades, so you don't need to use much pressure.

Ordinary screwdrivers are just too blunt for the job. As I've had my CPC6128 since 1985, I reckon this need only be done about every ten years!

Also, in issue 116, Donald Hay said he was having trouble getting 464 games to run on his 6128. This is also a problem I've had. One solution which I've used is to run a program which re-maps the 6128's memory to look like a 464. It doesn't always work, but quite often it does. I think it was a type-in from "*Computing With The Amstrad*", called REMAP464. Anyway, if anybody wants a copy of it, just send me a disk (3" or 3.5") and a stamped addressed padded envelope, to the address below.

*Martin Bela*

11 Colwell Drive  
Brookside  
Alvaston  
Derby  
DE24 0UP

<<Hi there Martin. Yup, another reason why 6128 keyboards might be failing and another way of solving the problem.

However, do you, or anyone else for that matter, know why CPC 664 keyboard membranes are so delicate?. You only have to sneeze on them and they go wrong -Philip>>

## THEORY OF NUMBERS

Dear Philip

I read John Shaw's letter in WACCI 116 with interest and amazement. The book he mentions, "*Recreations in the theory of numbers*" by A. H. Beiler has been a

favourite of mine for the last 25 years or so. I've never tried to reproduce the quadratic residue results before, but I've just written a little program to see what I can do. And here it is.

```
10 DEFINT a-z:MODE 2:LOCATE 1,1:
PRINT "X";
20 LOCATE 1,2:PRINT "X";
30 y=2:FOR p=3 TO 6131 STEP 2
40 FOR x=3 TO SQR(p) STEP 2
50 IF p MOD x=0 GOTO 100
60 NEXT
70 y=y+1
80 r=p MOD 29
90 IF INSTR(" 0 1 4 5 6 7 9 13 16 20 22 23 24
25 28 ",STR$(r+"))>0 THEN LOCATE
y\10+1,(y MOD 10) +1: PRINT "X";
100 NEXT
110 LOCATE 1,12:STOP
```

When you run it, you get a perfect representation of the Hollerith card illustrated in the book. Until very recently I had a card punch, that could be used to produce real live Hollerith cards, and I regret that it got corroded through sitting at the bottom of a pile of junk, and now its gone to that big computer scrapyards in the sky. It would be nice to turn the picture into a real card.

Does anyone out in WACCI land have access to a working card punch?

Some notes of explanation - line 10, 20 - 1 & 2 both have 29 as a quadratic residue and are dealt with here as special cases line 30 - there is room for 800 prime numbers per card and 6131=the 800th prime line 40-60 - these check whether p is a prime. If the test on line 50 is true then p is composite and we ignore it line 70 - increments our count of the number of primes found line 80 - we use the quadratic reciprocity theorem. If 29 is a q.r. of p then p is a q.r. of 29 and we can eliminate multiples of 29 from p line 90 - compares r to a list of quadratic residues of 29, and prints a hole if it matches.

None of this is exactly tuned for high performance, and it would need a bit more effort to generalise it to other residues. (Line 90 would need to be replaced with a real test, rather than just comparing with a hard coded list; and line 80 would need to take account of cases in the quadratic reciprocity theorem that are ignored here as not relevant). I'm guessing, but I suspect the John is trying to match the answers to the book illustration in the wrong order - it reads top to bottom and left to right, which took me a while to

realise. The book has quite a few errors, but this doesn't look like one of them. My address is on the services page, if John or anyone else wants to get in touch, I'd be very happy to discuss (*strictly amateur*) theory of numbers.

*Stuart Gascoigne*

<<Urm, I've received copies of the relevant pages from John as soon as I've read them, I might be able to have some idea just what you mean. I'm sure John does, which is the important bit. Thanks a lot for looking at the problem - Philip>><<Please look in issue 116 for Stuarts address. -John>>

## EURO-WACCI

Dear Philip,

Firstly congratulations on the first and, I'm sure I'm not alone in this thought, not the last issue of EURO WACCI to come? It's because of forward moving ventures such as this that show and give the trust back to the members as to us having the right people at the top where they need to be. I'm glad someone has the foresight to think of these things and in doing so ensure WACCI's on-going future.

Secondly, from time to time it has come to my attention by letter or telephone conversation that a POSSIBLE SPLIT convention may be laying in some dark recess of the minds of the committee.

I have for what it's worth being running this idea over in my own mind since mid last year. There has been mention that a split convention would reduce the attending membership. Those attending a split convention may then not only be reduced in numbers but also in having cash to attend with? Two very valid reasons against a split convention I agree.

But!, consider this... Speaking from personal experience, I have attended both the second and the third conventions.

On the first occasion I made the daunting eight hour journey by coach (*I have a fear of trains and missing stations /connections*). At the second convention I had nothing more than a tenner in my pocket and my return fare home, oh and a few discs for sale with software on from my then DARKSIDE SOFTWARE selection. I came home with a year's worth of excellent fan fold paper, an EPSON LX-86 mono printer equally in excellent condition, fifteen quid in my pocket and a tired but worthwhile smile on my face and a beautiful silver necklace,



# First Steps In Machine Code

by Richard Fairhurst

chapter four

As I mentioned earlier, the computer basically understands numbers in binary notation (base 2). So, for example, the number 137 would be understood as the following: 10001001 in binary.

That is because, from RIGHT to LEFT, the decimal numbers represented by each binary digit are 1, 2, 4, 8, 16, 32, 64 and 128 (i.e. powers of 2, from 2 to the power of 0 (1) to 2 to the power of 7 (128)).

In this example, the number 137 breaks down into  $128+8+1$ , so the left-most binary digit (or BIT for short) is set to 1, as is the fourth from the left (which represents 8), and the right-most bit (which represents 1).

Try writing a few numbers (from 0 to 255, as that's the greatest number you can represent like this) in binary form to get the hang of it.

The bits are referred to as BIT 7 to BIT 0. BIT 7 is the left-most bit, i.e. that which represents 128 (which is  $2^7$ ). BIT 0 is the right-most bit, that which represents 1 ( $2^0$ ), etc. So bit 3 is the one which represents 8,  $2^3$ .

**Where's all this leading?** Well, the Z80 is excellent at manipulating bits. The basic instructions in this area are SET and RES.

These instructions take the form SET bit,register (or RES). So, for example, you could have the instruction

```
SET 7,A
```

This would set bit 7 of register A. An example would be:

```
LD A,33
SET 7,A
```

This loads 33 into the A register, and then in the next instruction sets bit 7 of this - which represents 128 in decimal.

The final value of A, then, would be

161. Or, you could have:

```
LD H,17
RES 0,H
```

This first of all loads 17 into H, and then resets bit 0 (1 in decimal), so instead of containing 17 ( $16+1$ ), H will now contain 16, as the 1 has been wiped out. Something like RES 7,H would not have any effect, because bit 7 was not "set" originally. What would be the instruction needed, using SET, to change H from 16 to 48?

The answer is SET 5,H, because bit 5 is 32 in decimal ( $2^5$ ), and  $16+32$  is 48.

The forms of these instructions are SET bit, register and RES bit, register where bit is from 0 to 7, and register is any general purpose register (A,B,C,D,E,H or L). There are also a few extra forms:

```
SET bit,(HL)
SET bit,(IX+displacement)
SET bit,(IY+displacement)
```

(and of course the equivalents for RES)

These respectively set a bit in the byte that HL points to - so if HL contained the value 40000, and at memory address 40000 was stored the value 3, RES 0,(HL) would change that value to 2 (resetting bit 0, which represents 1 in decimal) - and set a bit in the byte that IX+displacement (or Y+displacement) points to, with displacement, as usual, being from -127 to 127. If IX contained 32768 (in hex, &4000) and the value stored at memory location 32770 (&4002) was 160 ( $128+32$ ), then SET 6,(IX+2) would set bit 6 at 32770, so adding 64 to it, and changing the value from 160 to 224.

Finally for these instructions, there are two left: SCF and CCF. SCF sets the carry flag (to 1), and CCF inverts it (or "complements" it) - so if it was 1 previously it will become 0, and vice versa. It doesn't take a huge stretch of the imagination to work out that these mnemonics stand for "Set Carry Flag" and "Complement Carry Flag"!

Some of the most important instructions which work on a "bit-wise" basis (i.e. related to bits) are the AND, OR and XOR instructions.

These aren't the easiest thing to grasp, but an example should make things easier.

Say that you have issued previously the commands

```
LD A,15
LD H,129
```

so that A contains 15 and H contains 129. These relate to 00001111 in binary for A, and 10000001 for H. The effects of the three bit-wise operations (AND, OR and XOR) are as follows:

**A OR H is:**

```
00001111 (15)
OR 10000001 (129)
is 10001111 (143)
```

**A AND H is:**

```
00001111 (15)
AND 10000001 (129)
is 00000001 (1)
```

**A XOR H is:**

```
00001111 (15)
XOR 10000001 (129)
is 10001110 (142)
```



**Can you see what's happening?** With the OR operation, the result is all the bits that are in A as well as those which are in H, combined: i.e. a bit is used if it's in A OR it's in H. With AND, the result is those which are in A AND in H: and with XOR (*which stands for eXclusive OR*), a bit is set in the result if it is in A OR it is in H but NOT BOTH.

One of the registers used in the operation has to be A, and the result is always put into A. You can AND, OR and XOR A with any register of A,B,C,D,E,H or L, as well as a byte fetched from (HL), a byte fetched from (IX+displacement) or (IY+displacement), or even a number not in any register.

**Typical instructions include:**

**XOR D**  
(XOR D and A and put the result in A)  
**AND H**  
(AND H and A and put the result in A)  
**OR L**  
(OR L and A and put the result in A)  
**XOR (HL)**  
(fetch a byte from address HL, XOR with A and put the result in A)  
**OR (IX-3)**  
(fetch a byte from address IX-3, XOR with A and put the result in A)  
**AND 17**  
(XOR A with 17 and put the result in A)

You might have noticed above that the instructions XOR A, OR A, and AND A are possible. These might seem a little pointless - after all if you OR A with A, then there will be no change in A. Similarly with AND A, and XOR A will set A to 0 - so these seem a little pointless.

However, they do have a use. The instructions alter the flags (e.g. carry and zero flags) according to the result. So, for example, if you have just issued LD A,0 then even though A is 0, the LD instruction does not affect the flags, so the zero flag might not be set. To tell the Z80 to work out the flag values, then OR A (or AND A) - so, in this case, the zero flag would be set because A is 0.

The XOR A instruction is useful if you want to set A to 0. Although you could always do LD A,0, this does not set the flags, and it takes up two bytes in memory (&3E - the LD A,data instruction - and 0 - the data to load into A). XOR A only takes up one byte.

Two final relevant instructions: CPL complements A (i.e. inverts all the bits, so binary 01110011 would change to 10001100) and puts the result back into A, and NEG takes A away from zero and puts the result into A. The flags are set according to the result.

We've already looked at the "bit-wise" operations - AND, OR, XOR, RES and SET. There is also a way of testing individual bits of a register, the originally named "BIT" instruction.

BIT has a similar syntax to RES and SET - BIT bit,register (for example BIT 5,H). What it does is take the appropriate bit from the register, complement it (if it is 0 set it to 1 and vice versa), and put that in the zero flag.

**For example:**

```
LD A,<any number>
BIT 0,A
JR Z, even odd: ... a routine executed if
the number was odd even: ... a routine
executed if it was even
```

What this does is take the value in A, find bit 0 in it (which will be 1 if the number contains a 1 - so, for example, 128 doesn't, being in binary 10000000, but 129 does - 1000001), complement this and put the result in the zero flag. This means that zero will be 1 (i.e. zero will be "set") if bit 0 contained a 0 (it will be 1 if bit 0 contained a 1), and if bit 0 had contained a 0 (i.e. no 1 in the binary break-down of the number) then the number must be even!

As with SET and RES, the permissible forms are BIT bit,register where bit is a bit number from 0 to 7 and register is A,B,C,D,E,H or L - and the other alternatives possible are BIT bit,(HL), BIT bit,(IX+ displacement), and BIT bit,(IY+displacement). Of the flags apart from zero, S (sign) and P/O (parity/overflow) are altered but not in a predictable way, auxiliary carry is set, and carry is unaffected.

Of course, there are more sophisticated versions of testing available than this BIT instruction. This is where the CP opcode comes into play.

CP is an abbreviation for compare. What it does is compare the value in A with another register, or a value after the instruction. If they are the same then it sets the zero flag.

For example, say you wanted to CALL a routine if the A register contained 13. You would use a piece of code like this:

```
CP 13
CALL Z,routine
```

Although the zero flag is the most important one in this context, the other flags are set too. You can compare A,B,C,D,E,H and L with A, as well as a byte fetched from (HL), from IX+displacement) or from (IY+displacement), and a value directly after the CP instruction (as in the above instruction). CP A fulfills a similar function to OR A and AND A.

Incidentally, you'll rarely find CP 0 in a machine code program. It's far easier to use something like OR A, which sets the zero flag if the contents of A is zero but does not affect the value in A.

There are a few variations on CP, too - these are CPI, CPD, CPIR and CPDR. What CPI (ComPare and Increment) does is compare A with a value fetched from (HL), and set the Z flag accordingly. It then increments HL (so another CPI will fetch a value from the next memory address) and decrements BC (which is to be used as a counter).

CPD is similar, except HL is decremented rather than incremented. CPIR and CPDR are repeating versions of CPI and CPD: what happens is that CPI (or CPD) is carried out, and if BC is not zero AND the zero flag hasn't been set (i.e. A hasn't been found at (HL)) then the instruction (CPI/CPD) is repeated.

**For example:**

```
LD BC,&4000
LD HL,&C000
LD A,5
CPIR
```

This looks through screen memory (the &4000, or 16384, bytes from &C000, or 49152) for the value 5 stored in a byte. If it's not found, then BC will be 0, HL will be 0 (because it has been incremented &4000 times from &C000, and has wrapped round back to 0), and the zero flag will not be set. Otherwise the zero flag will be set and HL will contain the address where it was found. More next month. Happy coding.

*Richard*



# Clishmaclaver

It's still Scots for gossip



Hi there. As you can see I have a smaller version of Clishmaclaver for you this month. There are two reasons for this, one is that I don't have a lot of chat to tell you and secondly there is not a lot of room in the magazine for both Clishmaclaver and a Puzzle Page so the two have become one for this month. So here we go with the chat.

## WHO WERE YOU WITH LAST NIGHT?

A little bird tells me that WACCIs very own Dave Caleno has traded in his wife for a newer model. No I hear you cry - Dave wouldn't do that to his missus! Well actually he didn't. Daves wife Dot had a special photo makeover done and I am reliably told that the transformation was incredible. Dot hasn't had any drastic surgery or anything like that but apparently the makeover brought out her best points and enhanced others, the canvas was obviously good to begin with.

So Dot, good for you and watch out Dave she might trade you in too!!

## BUMPS ALL ROUND

I have two Birthday announcements for you this month so get ready to grab an arm or a leg for the traditional WACCI Birthday Bumps.

**Jonty Jones.** Yes he of the Ghoul and Rusty de Foil fame. Jonty will be celebrating his 35th Birthday on 2nd December. Happy Birthday Jonty.

*Best wishes from us all.*

**Rob Scott.** One of the mainstays of that awesome disczine group BTL celebrates his Birthday on 19th December Happy Birthday Rob. *SURPRISE!*

## A GIANT LEAP FOR MANKIND

Congratulations are being sent now to **Kelly Hardwick**, foster Daughter of our very own Angie.

Kelly has recently been the toast of the Hardwick residence by giving them a thrilling performance of her first steps. Well Done Kelly and keep up the good work.

# Carols Puzzler



Hi once more. There was a very serious lack of puzzle entries last month. Have you all been abducted by aliens I wonder or can it be that I have found the answer to my own puzzle and got you all stumped? Yes I know that last months was a bit on the naff side but the idea was a good one. Unfortunately I didn't have the time to finish my puzzle properly and John very kindly finished it off for me. Perhaps thats why you didn't want to enter or am I just kidding myself and why am I talking to myself like this when I am sure that no one is taking the slightest bit of interest while I rattle on and on and why is it that ..... Have fun!

## WHAT WERE THOSE ANSWERS

Well I thought they were easy peasy it was just where to put them. I haven't got enough room to print the whole thing out again for you but here are the answers anyway. They are in the same order as printed in the magazine.

## DOWN

Beginning, Extravaganza, Solution, Eleven, Mouse, Bescott, Crossword, Exquisite, Activate, Religious, Cake, Candles, Zeus.

## ACROSS

Boisterous, Convention, Members, Demonstrate, WACCI, Disk, Birthday, Extention, Hard drive, Telephone.

## AND THE WINNER IS

Due to the lack of entries and the fact that I only had time to design the one puzzle, I have chosen only one grand winner and that is:

Our very own king of the written waffle Peter Rogerson. *Well done Peter.*

Peter wins for himself a £10 WACCI voucher.

## THIS MONTHS PUZZLE

As you can see and I have already commented on this, there is a serious lack of space so again only one puzzle. Therefore I am drawing on previous successful puzzles and using the question and answer type again so here goes.

All the following are song titles and have the word LOVE in them. I have given you the first letters so fill in the words.

IL\*\*\* T\* L\*\*\*  
 S\*\*\* I\* T\*\* N\*\*\* O\* L\*\*\*  
 G\*\*\*\*\* T\* L\*\*\*  
 L\*\*\* H\*\*\*\*\*  
 L\*\*\* M\* L\*\*\* M\* D\*\*  
 IL\*\*\* Y\*\* L\*\*\* M\* L\*\*\*  
 P\*\*\*\* L\*\*\*  
 L\*\*\* M\* D\*  
 L\*\*\* I\* I\* T\*\* A\*\*  
 A\*\* I L\*\*\* Y\*\* S\*

Thats it then entries in by 15th January please. Just enough room left for me to wish you all a very Merry Christmas and a Happy and Prosperous New Year. Take care all, see you soon.

*Carol*





# Market Stall

with Angie Hardwick

23 Station Place,  
Bloxwich, Walsall  
West Midlands.  
WS3 2PH  
Tele: 01922 449730

## FOR SALE:

### HARDWARE

CPC 6128 Keyboard + drive -	£25
CTM 644 Colour monitor -	£15
CPC 464 Plus -	£20
CM14 Colour monitor for plus -	£40
DDI1 Disc drive & interface 464	£25
3.5 drive, complete with cable.	£30
User manuals for 664 & 6128, new -	£5
CP/M Plus system discs (both)	£5
SM 2400 Modem, 2400 baud + manual	
& cable -	£15
Printer cable -	£5
Plus B drive cable -	£5
Tape lead for 664 / 6128 -	£5
JY2 Joystick (socket for 2nd stick)	£2
Quality joystick -	£3
Joypad for Plus machines	£2.50
Magnum Lightphaser + disc software -	£7.50
Blank 3" discs (formatted)	£1 ea
Unused 3" discs -	£2 ea
Blank 3.5" discs (Ex software)	20p ea

### BOOKS

Mastering machine code on the Amstrad 464 + 664 -	£2
Using Amstrad disc drives (Babani)	£2
Soft 157 CPC 464 Basic specs	£5
Soft 158A DDI1 Firmware specs	£5

### TAPES

(Most can be supplied with copy on disc for £1 extra)

Amstrad basic tutorial -	£2
Dr Watson ass language course	£3
Ocean Laser genius -	£2
Masterfile 464 -	£2
All of the following for 50p ea (boxed)	
Bonzo super meddler, Army moves, Back to reality, Batman, Beyond the ice palace, Bride of Frankenstein, Dizzy, Dragon's Lair, Dun Darach, E-motion, Escape from Singe's castle, Feud, Flimbo's Quest, Frank Bruno's boxing, Ghost Hunters, Ghostbusters, Indiana Jones and the last crusade, Manic miner, Neil Android, Nemesis, On the run, Postman Pat, Roadrunner, Supernudge 2000, Sweevo's world, Triple Decker 1 - Classic invaders / Muncher / Axiens, We are the champions - All of the following for 20p	

each Dan Dare, Paperboy, Roland in the caves, Roland on the ropes, Galactic plague, Through the trap door, Xanagrams, AA covertapes (boxed) 4,6,7,8,9,10,11,12

### DISCS

Gauntlet, the deeper dungeons - £1.50

### CARTRIDGES

Boxed with instructions £5 Operation Thunderbolt. Pro tennis tour. World of sports. All plus p&p.

*I would like some of my living space back, so I am open to reasonable offers.*

**PLEASE CONTACT;** Dave Simpson, 9, Belmont Gardens, Raunds, Northants, NN9 6RN. TEL: 01933-622692.

### WANTED

Dennis Reed wants; Information about the Amstrad Action Game Mystical he has it on tape and would love to get it over to disc can you help?

Dennis wants the following games: Rick Dangerous II, Slim City, Laser Squad, Fire and Forget, Lords of Chaos, Rainbow (Arts), Druid, full game please he already got the demo.

Any information about a programme called Outscan. Finally instructions for games Dam Busters and Druid.

**PLEASE CONTACT** Dennis at 46 Shalford Road, Oulton, Solihull, West Midlands.

**Graham Ridgwell** wants; New Word cpm Word processor, Pyraword Word processor and Protext Office (Amsdos)

**PLEASE CONTACT** Graham at 110, Orchard Road, South Ockendon, Essex. RM15 6HH TEL: 01708-852961.

**Robin Choudury** wants: Game called Basket Master for 464

**PLEASE CONTACT** Robin at 131, Harlaxton Drive, Lenton, Nottingham NG7 1JD Tel: 0115-9242620 between 6-10pm.

## FOR SALE

10 Brand New Asmdos 3" Discs sensible offers around £15.00 plus post & packing please.

**PLEASE CONTACT:** Doug Webb, 4, Lindsay Drive, Chorley, Lancs. PR7 2QL TEL: 01257-411421

## FOR SALE

Computing with The Amstrad and AA Magazines as follows:

### Computing with The Amstrad

Feb to Dec 1985  
Jan to Jun and Aug to Oct 1986  
April 1987  
April to July 1988

### Amstrad Action

May to Sept & Nov 1988  
Jan to July and Sept to Oct 1989  
Jan to Dec 1991  
Jan to Oct & Dec 1991  
Jan 1992

All at £1.00 each including post and packing. Anyone have any interest in old reel to reel tapes Wally has some if you need them.

**PLEASE CONTACT:** Wally Collinson, 24, Tommy Taylors Lane, Cheltenham, Gloucester G150 4NJ TEL: 01242-514234

## FOR SALE:

Disc Software as follows all at £3.00p each: Monty Python, Gauntlet, Advanced Dungeons & Dragons, Andy Capp, Sigma 7, Catch 23, Dragon Ninja, Fairlight, Indiana Jones Last Crusade, Indiana Jones Temple of Doom, Jump Jet Flight Sim, Driller with freescape and Shinobi,

Football Manager & Expansion Disc £4.00, Prototype (Protext) Print Enhancer and Locksmith Disc/Tape Utility at £5.00 each.

**PLEASE CONTACT:** Anthony Taylor 77 Anton Way Aylesbury Bucks HP21 9LX  
*Scrya in January. Happy xmas. Angie*



# Programmers' Patch

by Matthew and Stephen Phillips

*In the last of three articles about menu handling in BASIC we are going to look at how the routines we have presented work. Remember that it is possible to use the subroutines yourself without having a clue how they actually do the job. If you want to adapt the subroutines yourself or use some of the techniques in your own programs, then the following explanation may be helpful. If it isn't then write to Fair Comment and complain! The routines have been reprinted for you yet again, along with a table showing all the variables we use.*

## WENDING OUR WAY

The main subroutine, lines 1000-1009, contains several WHILE-WEND loops. Line 1008 sees our favourite loop for clearing the keyboard buffer. This is done before returning to your program in order to make sure that the key presses from the menu selection are "used up" properly. Try taking the line out and you will soon see why it is useful to have it there. Lines 1001-1007 form the main WHILE-WEND loop of the subroutine, within which there is yet another loop at lines 1002 to 1004.

The main loop is essentially all about checking the keys that the user presses.

The "up" and "down" keys are detected in line 1005 and the internal variable md is set to indicate which direction the menu bar should move, using much the same technique as in the disc menu programme we featured in issue 110. In the next line the other keys, "le", "ri" and "fi" are checked. The value of kp is set according to whether those keys are pressed or not, as we explained last month. Setting aside lines 1002 to 1004, which do the moving of the menu bar, that is all there is to it. The main loop keeps going while (kp AND kf)=0

This provides the mechanism to ignore certain keys. If kf is set to 4 (or 100 in binary), then only the "fi" key will cause the subroutine to end. The bits of kp are set in line 1006 according to which keys are pressed. Suppose the "le" and "ri" keys were pressed; kp would be 3, or 11 in binary.

```
011 kp
100 kf
000 kp AND kf
```

The pressing of the "le" and "ri" keys is masked out by the key flags, kf, giving a result of zero. It is easy to see that the loop will only come to an end when the "fi" key is pressed.

Masking out bit-significant values using the AND operator is a very important technique, especially if you are trying to squeeze large amounts of information into memory efficiently.

## PUB CRAWL

The smaller loop in lines 1002 to 1004 makes sure that the menu bar moves when the user presses the "up" or "down" keys, and keeps on moving the menu bar in the same direction over any masked out menu entries. You will remember the example last month for ordering WACCI back issues, where the menu bar did not stop over the issues that were out of stock.

The information as to which menu items are out of bounds is held in the parameter mf. This is also a bit-significant value, which means you have to look at it in binary to make any sense of it. The value of the least significant bit (the one on the right) refers to the first item on the menu, the next digit along refers to the second item and so on.

For example, if mf was 8 (1000 in binary), this means that the 1st, 2nd and 3rd items on the menu can be selected, but the 4th item is to be avoided. If mf was 12 (1100 in binary), then the 3rd item must not be selected either.

The position of the menu bar is held in mp. For more than one reason we start counting from zero, so mp is zero when the menu bar is over the first item on the

menu, one when it is over the second item and so on.

The expression (2<sup>mp</sup> AND mf)>0 in line 1002 is designed to test whether the menu bar is over a prohibited item. (The ^ symbol is the same as the up arrow that shares a key with the pound sign on your CPC). Try out the following on your computer:

```
FOR mp=0 TO 6:PRINT
BIN$(2mp):NEXT
```

This prints up 2<sup>mp</sup> in binary, and you will see that as mp goes from 0 to 6, the binary form of 2<sup>mp</sup> goes from 1 to 10, 100, 1000 and so on. When this value is ANDed with mf, it has the effect of picking out the binary digit of mf appropriate to that menu position and ignoring all the others. Thus "2<sup>mp</sup> AND mf" is zero when we are allowed to stop on a menu position, and greater than zero when we need to roll over it.

If you look at line 1002 though, you will see that the WHILE statement is a little more complicated. The bit we have just looked at keeps the loop going until we are over a menu item that is selectable, but we need another part to get the menu bar moving in the first place. Line 1005 is where the up and down keys are checked. The md variable is set according to the direction, and then mz is put equal to md.

If up or down has been pressed, md and mz will be 1 or -1, so mz will be true. When the main loop gets back to line 1002 this means that the WHILE condition there will be true, and BASIC will execute the loop that moves the menu bar. The first command inside the loop,



on line 1003, sets *mz* to zero again, making it false. The menu bar then moves on to the next menu item up or down. Upon reaching the *WEND* in line 1004, the bar moving loop will only execute again if the bar is over a prohibited menu option, since *mz* has been reset to the false value of zero.

**Why did we need another variable though - could we not just have used *md*?** We certainly need a variable that shows us when a key has been pressed to trigger the loop in lines 1002 to 1004 and set the menu bar moving. We also need to reset that trigger to zero or else the menu bar will never stop moving. The trouble is that if we used *md* for this purpose, we would get in a mess if we moved onto a prohibited menu item. Having set *md* to zero, the next time through the loop we would not know which direction we were meant to be going in when skipping that menu item to move to the next one!

#### WARP FACTOR MCH

Line 1003 is where the menu bar is actually moved. First we *GOSUB* 1010, which removes the bar from the screen. Then *mp* is adjusted, and finally we have *GOSUB* 1010 again to put the menu bar back on the screen in the new position. The reason we can use the same routine for removing and redisplaying the menu bar is that we are using the *XOR* graphics mode.

The adjustment of *mp*, the menu position variable, is worth looking at. We use the useful *MOD* operator in order to make the menu bar loop round. When you get to the bottom of the menu, pressing the down key will take the menu bar right to the top of the menu again, and vice versa.

One way of writing this would be something like the following:

```
mp=mp+md
IF mp=mch THEN mp=0
IF mp=-1 THEN mp=mch-1
```

but using the *MOD* operator we have managed to condense it to:

```
mp=(mp+mch+md) MOD mch
```

**How does this work?** If you look up *MOD* in your manual (*don't bother if you have an original CPC 464 manual - they forgot to put it in*), you will find it described as returning the remainder after dividing the first argument by the second

argument. In our case it is the remainder after dividing *mp+mch+md* by *mch*. Another way to think of it is that *MOD* keeps on subtracting *mch* from *mp+mch+md* until it gets a result from 0 to *mch-1*.

Suppose that *mch* is 6, meaning six menu items numbered from 0 to 5. If we were on the last menu item then *mp* would be 5. Pressing down would set *md* to 1, so *mp+md* is 6. Divide that by *mch*, which is 6 also, and it goes exactly once, so there is no remainder. Therefore the new value of *mp* will be zero, which signifies the top item on the menu.

Let us try going up from the top menu item. The menu position, *mp*, starts as zero this time. Going up translates into subtracting 1, so *mp+md* is -1. The only trouble is that if you then do *MOD* 6, it will still be -1, and we want 5. This is why the expression in line 1003 has an extra *mch* added in, as *mp+mch+md* is 5, and when you take the remainder on division by 6, you end up with 5 as the answer, which is the last menu item, just as we want.

#### THAT'S ALL FOLKS

That pretty well wraps up the menu subroutines, so next month we will have a go at something completely different. Just to show that no program is ever perfect though, try to see if you can find a way of removing four characters from line 1002 in a way which does not affect the operation of the program, or if anything slightly improves it. We only spotted it when writing this final article!

## TABLE OF VARIABLES

### Parameters to set up:

<i>mch</i>	Number of choices on the menu
<i>mp</i>	Menu bar position (zero for item on menu)
<i>first</i>	Menu flags (see last month)
<i>mf</i>	Menu delay
<i>mde</i>	Pen to use for the menu bar
<i>mcol</i>	Vertical spacing of menu items in graphics coordinates
<i>msp</i>	Graphics coordinates of top left of menu
<i>mx, my</i>	Menu bar height in graphics coordinates
<i>mbh</i>	Menu bar length in graphics coordinates
<i>mbl</i>	<i>INKEY</i> numbers of the up and down keys
<i>up, dow</i>	<i>INKEY</i> numbers of other keys that the menu responds to.
<i>le, ri, fi</i>	Key flags (see last month)
<i>kf</i>	

### Values returned by the routines:

<i>mp</i>	Menu bar position (as above)
<i>kp</i>	Keys pressed (see last month)

### Variables used internally by the routines:

*delay, mc, md, mz* (*there is no need to know what these do, but it is unwise to use them for anything elsewhere in your program*).

Happy Christmas  
Stephen and Matthew Phillips.

### Listing 1

```
1000 kp=0:md=1:mz=0
1001 WHILE (kp AND kf)=0
1002 WHILE (2^mp AND mf)>0 OR mz
1003 mz=0:GOSUB 1010:mp=(mp+mch+md) MOD mch:GOSUB 1010
1004 WEND
1005 md=(INKEY(up)>-1)-(INKEY(dow)>-1):mz=md
1006 kp=-((INKEY(le)>-1)-2*(INKEY(ri)>-1)-4*(INKEY(fi)>-1))
1007 WEND
1008 WHILE INKEY$<>"":WEND
1009 RETURN
1010 PRINT CHR$(23)+CHR$(1);
1011 MOVE mx,my-mp*msp+(md=-1)*(mbh-2)
1012 FOR mc=1 TO mbh/2
1013 DRAWR mbl,0,mcol:MOVER -mbl,-2-(md=-1)*4
1014 FOR delay=0 TO mde:NEXT
1015 NEXT
1016 PRINT CHR$(23)+CHR$(0);
1017 RETURN
```



# AI-NEVER by Ron Izett

Some years ago, I thought I would dabble in so-called Artificial Intelligence, and to that end decided to construct a maze with an "intelligent" blob finding its way through. In the event I lost interest (for that read I couldn't hack it!) but I did write a pilot program which might just be of interest to others.

## THE PROGRAM

```
5 INK 0,13:INK 1,0
10 CLS
20 x=0:y=200:x1=400:y1=100:x2=200:y2
=50:x3=50:y3=150
30 MOVE x+x1,y+y1:GOSUB 1000
40 MOVE x+x2,y+y2:GOSUB 1000
45 MOVE x+x3,y+y3:GOSUB 1000
50 x=0:y=200
60 WHILE TEST(x+10,y)=0
70 PLOT x,y,1
80 IF x>=640 THEN GOTO 110 ELSE x= +1:
WEND
90 GOSUB 1500
100 IF x<640 THEN GOTO 60
110 PRINT CHR$(7):WHILE INKEY(47)
<>0:WEND
115 IF y3=150 THEN GOSUB 2000: GOTO
130
120 IF y3=100 THEN GOSUB 2030: GOTO
130
125 IF y3=50 THEN GOSUB 2060
130 CLS:GOTO 30
499 '
500 WHILE TEST(x+10,y)=1
510 PLOT x,y,1
520 y=y+1:WEND
530 MOVE x,y:y=y+10:DRAW x,y,1: GOSUB
600:RETURN
549 '
550 WHILE TEST(x+10,y)=1
560 PLOT x,y,1
570 y=y-1:WEND
580 MOVE x,y:y=y-10:DRAW x,y,1: GOSUB
650:RETURN
599 '
600 WHILE TEST(x+12,y-12)=1
610 PLOT x,y,1
620 x=x+1:WEND
630 MOVE x,y:x=x+22:DRAW x,y,1: GOSUB
700:RETURN
649 '
650 WHILE TEST(x+12,y+12)=1
660 PLOT x,y,1
670 x=x+1:WEND
680 MOVE x,y:x=x+22:DRAW x,y,1: GOSUB
750:RETURN
699 '
700 WHILE TEST(x-12,y-12)=1 AND y<>200
710 PLOT x,y,1
720 y=y-1:WEND
730 RETURN
749 '
750 WHILE TEST(x-12,y+12)=1 AND y <>
200
760 PLOT x,y,1
770 y=y+1:WEND
780 RETURN
999 '
1000 DRAWR 0,-150,1:DRAWR 50,0:
DRAWR 0,150:DRAWR -50,0
```

```
1010 MOVER 25,-100:FILL 1
1020 RETURN
1499 '
500 ya=y:loop1=0:loop2=0:WHILE TEST
(x+10,y)=1
1510 MOVE x,y:y=y+1
1520 loop1=loop1+1
1530 WEND:y=ya
1540 yb=y:WHILE TEST(x+10,y)=1
1550 MOVE x,y:y=y-1
1560 loop2=loop2+1
1570 WEND:y=yb
1580 IF loop1>loop2 THEN GOSUB 550 ELSE
GOSUB 500
1590 RETURN
1999 '
2000 IF y1=100 THEN y1=50
2010 IF y2=50 THEN y2=150
2020 IF y3=150 THEN y3=100
2025 x=0:y=200:RETURN
2030 IF y1=50 THEN y1=150
2040 IF y2=150 THEN y2=100
2050 IF y3=100 THEN y3=150
2055 x=0:y=200:RETURN
2060 IF y1=150 THEN y1=100
2070 IF y2=100 THEN y2=50
2080 IF y3=50 THEN y3=150
2090 x=0:y=200:RETURN
24999 GOTO 24999
```

## THE BLURB

Just in case the stuff in the foregoing boxes doesn't make a lot of sense, (and that wouldn't surprise me) I shall endeavour to explain what should happen when you run it, provided that you and I have managed to get it all down correctly!

The program simply sets out to draw a line across the middle of the screen from left to right. However, prior to this happening, three boxes or barriers are placed in various positions which prevent this from taking place. So, the line is drawn until it encounters the first obstacle.

The distance to the end of the obstacle is then measured in both directions, the shortest route is selected and the line is drawn round the obstacle until it returns to the mid-screen position, from whence it proceeds across the screen until it reaches the next obstacle, where the process is repeated and so on to the right-hand edge of the screen.

## PROOF OF PUDDING

To prove the point, pressing the space bar shuffles the boxes about and the line is drawn again, finding its way round the short ends as before.

Hardly earth-shaking I must admit, but perhaps it might give some an idea for something more useful.

## FOOD FOR THOUGHT

Clearly there is room for a great deal of improvement, and while it works well enough with rectangular objects, how would it perform on irregular shapes or circles? I have to say that this is something I thought about at the time but never got round to actually trying it. Now there's a challenge for some unsuspecting programmer!

## MULTI-TASKING?

While on the subject of programs going nowhere, I also got intrigued by the then buzz word "Multi-tasking" i.e. doing more than one thing at a time (but of course you know that) and foolishly thought "I can do that".

Well, I suppose what follows could be construed as such in the very broadest sense of the word, but once more the result is hardly earth shaking (I think I've said that before somewhere) but I offer it in pious hope that perhaps some of our newer and younger members might be encouraged to experiment further.

## THE PROGRAM

This another line drawing program, but this time four lines are drawn simultaneously on the screen from left to right and in different directions.

In the first instance the lines are plotted pixel by pixel, then on pressing the space bar the lines are drawn. What use this and the foregoing program could possibly have escapes me for the moment but I dare say someone will think of something.

```
5 MODE 2:INK 0,13:INK 1,0
10 x=0:y=300:a=0:b=100:c=0:d=100:e=0:f=300
15 LOCATE 32,1:PRINT"PLOTTED LINES"
30 FOR n=1 TO 250:GOSUB 100: GOSUB
200:GOSUB 300
40 PLOT x,y:x=x+2:NEXT
45 LOCATE 20,24:PRINT"PRESS SPACE FOR
DRAWN LINES"
50 WHILE INKEY(47)<>0: WEND :CLG:
LOCATE 32,1:PRINT"DRAWN LINES"
60 MOVE 500,350:DRAWR -500,-250: DRAWR
500,0
70 MOVE 500,50:DRAWR -500,250: DRAWR
500,0
80 WHILE INKEY(47)<>0:WEND: RUN
100 '
110 PLOT a,b,1:a=a+2
120 RETURN
200 PLOT c,d,1:c=c+2:d=d+1
210 RETURN
300 PLOT e,f,1:e=e+2:f=f-1
310 RETURN
24999 GOTO 24999
```

Ron Izett



# Getting The Most Out Of Your Art Package

## with Jonty Jones

The major problem with ART OR DTP packages is that SOME readers are trying to and simply not getting the best from their particular DTP or art package. The trouble is they are looking beyond the most simple routines that CAN be learned in a matter of moments. How would you like to draw in MODE 1 in ten colours? If the answer is YES then I have only one word to say... PIXELS.

### RED FACED CHEEK

Creating and drawing in mode 1 with ten colours is the simplest thing to do truly it is.

The most obvious answer is to use the three PRIMARY colours INK 1,1 (BLUE) INK 2,3 (RED) INK 3,24 (BRIGHT YELLOW).

well as these lets make use of them now. drop back into normal screen edit mode (MODE 1) and using DARK BLUE as the PEN or MAIN drawing tool create something that IS going to require loads of FILLING-in.

A good idea for this experiment is just OVERLAY half a dozen CIRCLES or so.

window up in the top left of the screen so you can alter the colours in line two to get the choice you want when the EDIT command is run. By going through this rather seemingly pointless and lengthy routine you can judge which are the best PATTERNS and INKS to use in a FINAL drawing.

### DESK TOP PROBLEMS

**Q1)** Can I load STOP PRESS SCR files into Advanced Art Studio?

**Q2)** I've saved a number of SCR files from Art Studio on disc with no compression routine being used. When I cat the disc to re-load the files they come up as 16K each and won't re-load what is wrong?

**Q3)** How do I take clip art and SCR files from Microdesign+ and or Power Page and use them in Art Studio?

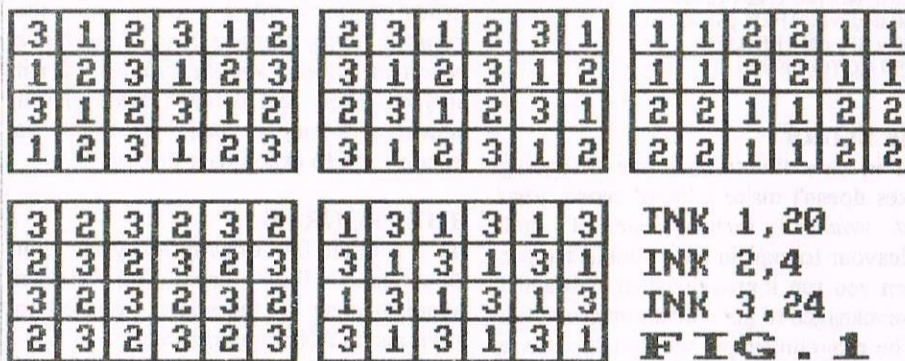
**Q4)** When trying to load DR files from a ROMdos format disc D1, D2 etc Microdesign keeps informing me the FILE IS TOO BIG USE \*\*\*\*\* I know the files are fine as I saved them correctly, why are they not loading?

**Q5)** I can't get Microdesign+ to print to a FULL Page, I bought the two disc version from ComSoft and followed the manual and installed the necessary bits.

I can get it to print at HALF SCALE and QUARTER SCALE but not FULL SCALE. So far down the page MD+ asked for a NEW page, I have an EPSON LX and STAR LC-10.

**A1)** If I remember correctly STOP PRESS saves it's screen files out with the extension .PMS?

If I'm right then simply tell Art Studio that you want to load <FILENAME.PMS> as



This however won't give you ten colours in mode 1, and when it comes to the difference in the mode 1 - mode 2 pixel sizes the sharpness of the three inks is VERY clearly visible in a mode 1 screen.

The answer is found in going in-between the PRIMARY colours and using softer pastel shades. Using the FILL/PATTERN EDITOR in Art Studio try these options: INK 1,1 (DARK BLUE) INK 2,15 (ORANGE) INK 3,22 (PASTEL GREEN).

Using FIG.1 as a rough guide change the pixels in the pattern as shown and then try a few MORE options of your own to get the feel of it.

### PAINTING BY NUMBERS

Of course to get these colours you'll need to enter the PALETTE mode and set the markers to the colours you require first. Now after you've either re-created the options bellow or you've created more as

Now taking each FILL PATTERN in turn that you've created fill in the sections of the overlapping circles at random. Now SAVE the SCREEN - DO NOT COMPRESS IT! 1, 2, 3, 4, 5, Er!, 8

Now RE-SET the CPC and type:

```
1 MODE 1
2 INK 0,0:BORDER 0:INK 1,1: INK
2,15: INK 3,22
3 LOAD" <FILENAME>" ,&C000:
CALL &BB18:WINDOW 1,25, 1,1:
EDIT 2
```

Line's 1 and 2 are self evident, Line 3 loads the screen file to the screen at &c000 and then display's it there and then. the CALL &BB18 simply suppresses the CPC's normal functions until a key is pressed, it keeps the screen clear of annoying default messages so the full picture can be viewed.

The WINDOW command creates a



opposed to <FILENAME.SCR>.

A2) I've only ever seen this error once before (*Hi Angie lov'*) Whilst I've never had this error occur it seems that you've un-wittingly saved a SCREEN file as a CLIP ART WINDOW file. The only thing I can think of is that your copy of Art Studio must have a bug of some sort.

To recover the SCR(s) trapped in this way your going to need a copy of the excellent Power Page. Use PP's CLIP ART loading option and load the trapped files as they appear on your disc. If you can't get them back send me the disc(s) and return post and I'll do it for you.

A3) Bringing Microdesigns and Power Page's CLIP art files over to Art Studio this is done by following the same routine as in A2 above.

A4) If you are using ParaDos to cover the 'other file' types then when you run Microdesign + you must have the chosen disc in your drive before running or MD+ won't recognise the format. When you save a SCREEN file on a ROMDOS disc it saves the file out as an 18K file instead of a standard 17K.

As the machine log's on any peripherals automatically inserting the disc with the screens on informs PARADOS of the file(s) status.

A5) I also use both these types of printers as it happens and have not come across this problem, I on receiving this call tried every printout option MD+ has and still found no problems.

The only thing I can think of is that the DIP SWITCH's are set wrong. Not being a lover of messing with something that works I can only suggest that you try resetting the switch's to your manuals suggested settings.

If any of these or other problems are bugging you and holding you up then I'm here to help.

As our beloved Editor said recently, "*I know your there to use and I INTEND TO have NO fears on that score!*" All I ask is that if you send a disc or letter include a stamp and return address.

I'll help anyone I can for this simple courtesy in return. Anyone wishing to

telephone me for help please do so, I don't bite! If as a recent caller did you feel that you can't wait until the weekend to call me as you've pulled half your hair out and still can't get sorted then do so, I'm never far from my CPC, and if I can help I will.

Still carrying on with the subject of drawing I'm now going to share a few tricks that will help you get the most from your art package.

*It's amazing how many people say they can't draw, there's nothing to it honestly. It makes no difference if you are using a pen, pencil or CPC!. I have a pen friend who has recently purchased Microdesign+ and in a few weeks she has become VERY confident and is producing some rather splendid results too.*

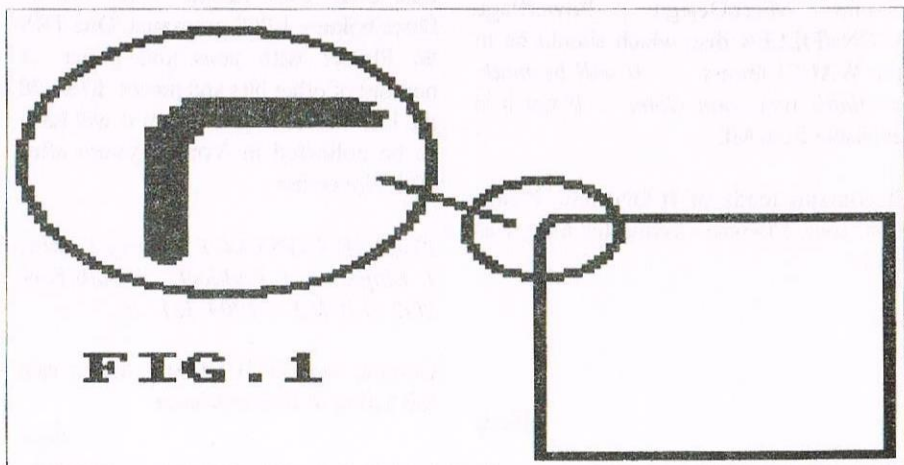
#### DRAW CLOSER...

There is only one real rule to drawing, and that is have fun when your doing it. Study practically any picture in any magazine and you'll be amazed at how many cheats were involved and you can use them too regardless of the DTP package you own. We all learned shapes and colours at Primary school and EVERYTHING around us can be broken down into simple shapes and made into a simple but effective drawing or doodle.

#### CUTTING CORNERS...

When drawing SOFT CORNERS for example it couldn't be simpler. Draw the square, rectangle, table etc just as you wish.

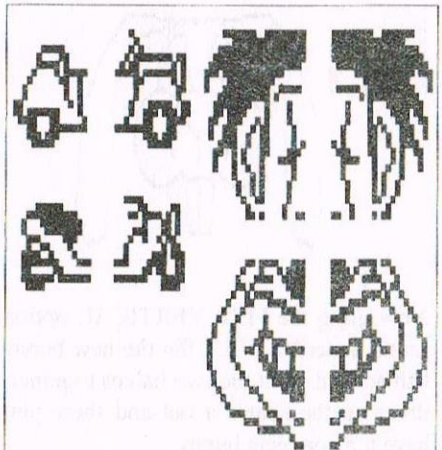
Now go to each corner in turn and cut off anything from three to six pixels in the fashion shown in Fig.1 The more pixels you take away the softer the corner will appear.



#### ICON DO THAT...

When using Microdesign+ you can double, treble the ICONS that you design and of course because they're ICONS they can be repeated as many times as you like at your own leisure!

All you need to do is draw in the case of a clowns face (*SEE FIG.2*) is draw the left hand side TOP and BOTTOM, and then using the REVERSE function print out the whole face in four moves. Of course you DON'T have to stop at faces...



**FIG. 2**

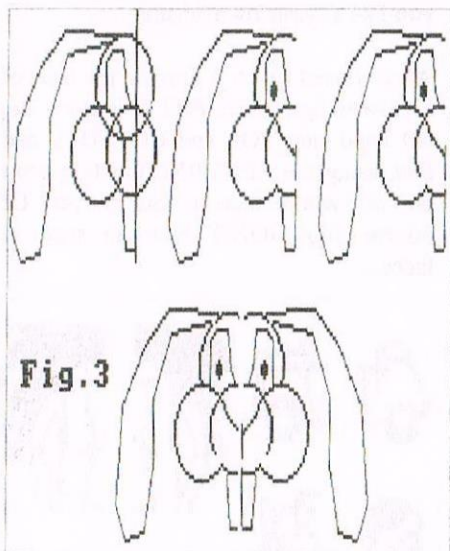
#### RABIT'NG ON...

The quickest way to draw or re-draw a sequence of pictures is to ONLY draw one half of the thing in question, well in most cases anyway (*mentioned that BEFORE J. Reilly pulls me up!*). Lets take a rabbits face for instance, er!, I don't know why but I just seem to have bunny's on the brains these day's (*Hi BKC - Hi Richard - COUGH!*).

Anyway using in this case Advanced Art Studio draw a vertical line roughly the



size of the final picture. Now as in FIG.3 strip away anything on the wrong side if the line. Now dress up the picture a little, now using the CUT & PASTE make another identical bunny half.



Now using the FLIP VERTICAL option found under MOVE... flip the new bunny half around, join the two halves together, dress up the centre a tad and there you have it a complete bunny!

This method can be use for countless drawings, trees, houses, cars, boats, hills, people the list is endless.

#### Anyone having trouble with:

ADVANCED ART STUDIO, MICRODESIGN+, POWER PAGE, STOP PRESS etc give me a ring on : 01670 852835 or drop me a line at : 17 BEECHWAY, NORTH SEATON, ASHINGTON, NORTHUMBERLAND, NE64 9TD. (INC SELF ADDRESSED ENVELOPE & STAMP FOR REPLY)

**PLEASE NOTE:** The clown face AND the car/motor cycle art part of a Art Studio MicroDesign+ PowerPage ICONS/FILLER disc which should be in the WACCI library <<It will be made available very soon -John->> If not it is available from ME.

It contains loads of ICONs etc. Please send some PD when asking for a copy as trade!

*Jonny*

## Market Stall Part 2

### Tape Software as follows:

Hard Drivin	£1.00
Trivial Pursuit Genus	£2.00
Fun School 2	£2.00
Linkword French	£2.00
The Image System	£3.00

### Hardware as follows:

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Two faulty 6128 circuit boards and other junk	£5.00 each
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**PLEASE CONTACT:** Anthony Taylor  
77 Anton Way, Aylesbury, Bucks HP21 9LX

David Miller wants: Any Educational programs for CPC6128 interested on Fun School age range 4-7 on 3" discs.

**PLEASE CONTACT:** David Miller,  
23, Gummings Way, Hemingford Grey,  
Huntingdon, PE18 9EE TEL: 01480 463658 evenings.

### FOR SALE:

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**PLEASE CONTACT:** Harry Gubby,  
1 Maplewood Paddock, Acomb, York  
YO2 3LB TEL: 01904-331726.

Coming soon, WACCI book library sale full listing in January's issue.

*Angie*

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# Euro-WACCI

by Peter Rogerson

*The convention was the one place in the known sky to be for anyone who wanted to get a taster of Philip DiRichleau's new experiment in mass communication and being an All-Round Good Egg.*

It's called Euro Wacci and it's a response to continentals who find WACCI itself too much of a financial burden. I doubt there are many British enthusiasts who willingly spend £2-50 on European CPC magazines (*if they exist*) so I'm not being critical of those who speak in strange tongues and have a penchant for diminutive reptilian legs. Never let it be said.

Euro-Wacci is a disczine. Upon loading (*roms off, brothers and sisters; |romon7 suffices*) one is faced with a screen complete with scrolling message. Now, I'm no fan of scrolling messages, which is one of the reasons why I'm no fan of the huge demos beloved of the European CPC scene, but this is really quite tastefully done and can be bypassed by a simple tap of the space bar. Thank the Heavens for space bars. Then we have a menu (*which is so huge it scrolls up*) and the whole thing looks good.

Philip has kept all of the best Wacci conventions, so there's his Thanx & Stuff and an embryonic Fair Comment. (*Euro-Wacci's brand new so its FC was forced into being embryonic*). Then there are the articles. Let's have the briefest of brief resumees. I don't want to steal too much of the disczine's thunder by repeating it here.

I was totally and utterly bemused and enraptured by Paul Dwerryhouse's article on Windows under the CP/M environment for the CPC and PCW range

of computers. It seemed so wonderful I had to phone Ernie Ruddick up to see if it's a spoof along the line of Powerpage Professional in the April (1st) issue. Neither of us were sure, but if there is a major new CPC development along the lines of a £70 Windows package I reckon I'd have heard about it before now. I'll tell you what: get your hands on Euro-Wacci and see for yourself. I suppose such a miracle is just about possible bearing in mind the huge PCW user-base.

I was equally fascinated by a history lesson in early computers which apparently had the acronym Leo as their name. Slow and cumbersome and for God's sake don't spill your coffee onto the miles of punched paper. But I had to smile: you can dry wet paper without losing its data, something I've yet to successfully do with a disc of any dimension!

Philip's analysis of his own addiction to ROMS is another good read. There's no doubt that the ease with which ROM software can be attached to the CPC is one of the reasons why it's such a damned fine machine. And of course he's right when he claims that his own set up, with the Protext suite of programs all snuggled up in his rom box, makes his own CPC possibly superior to your average highly-priced PC when it comes to word processing and allied sports. It makes me feel all wobbly inside when I write that!

Look: there are loads of articles on the

disczine and this review isn't meant to be an expanded list of the whole. I'd advise you to get your hands on a copy and see for yourself. Philip makes the point of emphasising that it's pure PD and freely distributable (*is there such a word?*) by all to all and sundry to sundry.

There's a great deal about Euro-Wacci which is praiseworthy. The range of articles particularly struck me as being worthy of note. On the upside it is good to look at, with a truly impressive introduction screen and then with each page scrolling easily and smoothly. The contents of this first issue are awesome and I only hope that their range and diversity can be maintained into the future. On the down side, and this is just a niggles, it's that ROMS-off irritation when you load the thing.

I hate giving other people's work a mark as if they'd just completed a particularly horrendous piece of GCSE English homework, but I will this time. I'm going to give Euro-Wacci 99%, and the odd percentage point away from perfection is due entirely to the number of times I've had to type |ROMON7 since I received my copy last week.

Side 2 of the disc has three PD games on it, something Philip would like to expand in the future to include members' own home-brew software. The three games on this are the Glenco demo of their Sprites Alive program, Space Froggie, an invaders clone and a pacman clone. All



pretty good, really. One little point. In his splurge Philip suggests he's included a second Froggy game, but I can't find it. There is a basic file called FROGGY2 but that's merely a second loader to FROGGY1.

Having completed this review I have a few afterthoughts. I can't help believing that this is the way Wacci itself should go. Now don't all shout at once, condemning me to a bottomless pit because their 464 won't load discs or to some other perdition because I'm advocating a huge and emotionally stressful change, but look at this:

1. Paper is monumentally expensive and the £2 we Brits pay for WACCI doesn't do much more than cover the costs of producing our pride and joy and covering the postage.

2. There's no logical reason why 464ers can't upgrade to disc (either by swapping their machines for one of the thousands of cheap 664s and 6128s lying all lost and forlorn in boot sales or advertised in classifieds for next to nothing or by buying one of the DDI-1 interfaces which can still be picked up reasonably cheaply on the second hand market).

3. Then all you'll need is a 3.5 inch second drive complete with side switch ... and the Euro-Wacci format for Wacci itself is a real possibility.

4. There's been debate recently as to whether WACCI should be produced on a CPC at all ... well, if it were on disc it would have to be, wouldn't it? It wouldn't be PD like Euro-Wacci is, of course. But I should think our present £2 wouldn't be increased for years to come.

5. There's nothing to stop us printing our own copies from the disc if we must have our monthly read on paper.

6. Think about it. After all, WACCI started that way, on tape, all those years ago.

*Peter Rogerson*

*So Peter, I gather that Euro-WACCI was good! I've had a look at Euro-WACCI and in my opinion no-one could have done a better job. Well done Philip.*

*John.*

# The Bomb Room

## by Mark Johnson

*Boy it sure does feel good to be back in the hallow pages of Wacci. A lot has gone on since I last wrote for the magazine (April) and for reasons that I will not go in to here, I have only just got back into the swing of things. Therefore I must say SORRY to John for not writing this sooner.*

### HOW IT ALL BEGAN

It all started when I saw an advert for the game in Issue 111 (April'97). I decided to buy the game straight away, without even seeing a review, as I liked the idea and concept of it. It duly arrived in the post a few days later. In a general conversation on the telephone with our beloved editor John (*well, that's one way of buttering him up*), I kindly "volunteered" (*with John twisting one arm behind my back*), to do a review of The Bomb Room for WACCI. The result of which you are now reading.

### WHAT'S THE BIG IDEA THEN?

The basic idea of the game is to disarm the rebels ultimate weapon...a nuclear bomb...hidden inside the rebel's Headquarters. As luck would have it the rebels have already been captured after years of fighting. But it is not as easy as you think, because the Headquarters are protected by an automated laser defence system. The building is also filled with a poisonous gas. On the up side, you are provided with a special laser reflective suit. However, if your shield strength (*indicated by a bargraph display above you visor*), reaches zero, your suit will puncture and the poisonous gas will enter. The suit can also be damaged by either falling too far or entering water, in which case it will fill up and you will drown! Your only defence against the

laser system is, wait for it...a hand-held laser gun. If the gun is aimed correctly you can knock-out the defence system in the particular room that you are in, in about four to six shoots.

### KEYBOARD OR JOYSTICK?

You will be pleased to know that you can play the game with the keyboard or joystick. The keypresses are listed in the very comprehensive instructions. I personally prefer to use the keyboard, as it is much easier to control your movements in this way. Besides which, my joystick is not working properly at the moment.

### THE VERDICT

Overall, this is an excellent game designed and written by our very own Martin Bela. The game play is enhanced by the fact that it has been designed using the 3D Construction Kit. This means that the graphics are truly brilliant and you feel like you are actually standing in the room itself. Another reason for this is because you are in fact standing in the room itself, looking through the visor in your suit.

This also means that you can walk/move in every direction possible - just like a normal human being. Other than that, all I can say is buy the game from Martin and you will not be disappointed.

By the way, SORRY Martin for not reviewing the game sooner. All the best.

*Mark Johnson*

You can get a copy of The Bomb Room, direct from Martin Bela his address is:  
11 Colwell Drive, Brookside, Alvaston,  
Derby, DE24 0UP Tele: 01332 755303

*John*



## IT'S OWN MEMORY

Each file you create has it's own memory bank, this is so very handy as it enables you to store other items/pages/letters connected to the main file and save them all under the one filename on the disc; it also allows you to cut & paste to the file on screen, you can set up a sample file and just weave the other files into it, I always set up a file called index which lists all the memory files, that way I do not have to work through them all to find a particular one.

## USEFUL FEATURES

Another very useful feature is Group Files which enables you to continuously load and print any number of files consecutively and if you are using Headers or Footers these will automatically continue on from the last number, so, if you are writing a book, no worries. If you are the secretive type you can enter a code word and your files will be saved in an coded form so that no one without the code word can read them. If you are the forgetful type make a note of the code you use.

Brunword will not load a file if there is already a file on screen, a prompt will warn you of this, but if you continue to load it will put the new file into the file memory under it's own name thus allowing you to use it as already stated. Unwanted files in the file memory can be KILLED without affecting any other memory file.

## PRINTING

Providing your printer can reverse, Brunword will draw all your boxes or hor/vert lines any where on your page, without stopping, if your printer does not reverse then you incorporate a STOP in code, whereas the printer will stop for you to reverse by hand and then, with a keypress will continue.

## IMPORTING CLIP-ART

The Video command will incorporate any drawings or clip-art, providing they are in binary, these can be merged into your document and manipulated to wherever you want by using the Margin reverse/stop commands. Video allows you to view the drawing first and if it's what you want will save it to disc, either as a binary file or as a compressed file eg. a 17k screen compresses down to 3k. I personally do my drawings using Gpaint in mode 2. then compress them and erase

the binary file to save disc space. The printer Menu, allows you to set your printer margins, length of page, page headers and footers and send up to 10 control codes to the printer and when you save your file the printer menu is saved with it; very handy.

## SAVING FILES

Brunword saves your files in it's own format complete with all codes, or as pure ASCII files, you can of course load any ASCII file into Brunword, unfortunately if those files have been saved with other WP incodes you will have to strip them out. (this is a hint to all those who use Protex and leave the incodes in.)

## SPELL CHECKER

The dictionary has 30,000 resident words which you can add to by creating your own dictionary on each disc and just loading it when using that disc, that dictionary is then merged with the original 30,000 in memory. It's fast, it spell checks every word as you type it in and bleep if it does not recognise, or if you don't wish to use the bleeper it will check the whole document in one go, approx 10 secs to check 700 words or approx 4000 words per minute.

## NOT JUST A WORD PROCESSOR

Brunword is not just a WP, it incorporates an excellent database and label printer, called Info-Script, and because both programs are resident, there is no time wasted in disc accessing; the database does not need the fields defined which makes it easy to store different types of data on different entries, it can be accessed at any time from the main program.

To obtain data and switched back to the Brunword main menu at a keypress, data merging from the database to the processor is simple enabling one general letter to be typed and the addresses automatically changed with each copy, from my own use it quite happily holds atwo page letter and 800 names and addresses in memory at the same time, it most probably holds a lot more but I haven't tried it;

## SEARCH

The search routine it uses is extremely fast and quite impressive, you can select files from any number of fields and sorting can be alphabetical, numerical or even by date, a great asset, in my various roles as secretary I do need and use all three. Info-

Script can also be used to work out mathematical problems and incorporate the answer directly into your letter or invoice that you are working on, ie., VAT, Running Totals etc.

There are still many areas of Brunword that I still haven't ventured into as I tend to learn what I need as I go along, I'm sure other fans will be quick to point out what I've missed.

*So, as a final note to Protex users, you must accept that some days you're the pigeon and some days you're the statue.*

*Bye Bye Playmates,*

*Mike Gushlow.*

*Very interesting article Mike, the pure file that you sent to me was a dream to load into Micosoft Publisher. I had no junk on the screen to edit-out which made doing the layout of your article a pleasure to do.*

*Maybe in the next few months you would like to submit another article on the features that you didn't cover in this one.*

*I'm sorry that you couldn't get to the convention, but hopefully you will be fit enough to come to the next.*

*John*

# MERLINE-SERVE

Wizzard 8bit printer  
port

The Wizzard 8 bit  
Printer Port is  
available at £15.00 -  
remember that  
members get 10%  
discount.

Brympton Cottage,  
Brunwick Road,  
Worthing,  
West Sussex  
BN11 3NQ

Tele:01903 206739





# The News Desk

## with Angela (ITGA) Cook

Brympton Cottage, Brunswick Road, Worthing,  
West Sussex, BN11 3NQ. Tel/fax: 01903 206739.  
E-mail: [angela.arthur@virgin.net](mailto:angela.arthur@virgin.net)



Taken from: Microsoft web site

*"And here it is, Merry Christmas, everybody's having fun. Look to the future now, it's only just begun..." Okay, so Slade may not be the best band to quote on a news page for a computer magazine but because it's nearly Christmas I'm making an exception. So may I wish you all a very merry Christmas and an extremely happy New Year.*

### SHAKEN NOT STIRRED

There has been a "general reorganisation of the club" writes Angie Hardwick, secretary to the WACCI committee. The review is basically to spread some of the jobs more evenly throughout the club so that John doesn't have so much on his plate (although he does like a lot on certain plates).

### EURO-WACCI

Issue 2 of Euro-WACCI should be available whilst you read. Philip is just adding the finishing touches as I write. The first issue has apparently gone down extremely well and Philip has been inundated with requests. Leaving Fair Comment means that he can concentrate more on building Euro-WACCI, which I am sure we all wish him well in.

To get a copy of Euro-WACCI, please send a 3" or 3.5" disc and SSAE to: Philip DiRichleau, 32 Arboretum Avenue, Monks Road, Lincoln, LN2 5JE.

### CPC SOUTH WEST

Many of you may have noticed the plugs for the CPC South West Convention last issue. The day was a success and very enjoyable. There weren't very many people there, slightly down on last year, but this just made it friendlier between those of us who did attend. I am working on an article to let you know all about it but I'm afraid I have been extremely busy (see below) and not managed to get it done for this issue. I shall do my best for next issue.

If Dave Stitson organises another get together for next year, which I sincerely hope he does, we may be able to lure Richard Fairhurst with the promise of visits to real Plymothian cider.

### ROUTING AROUND

At last it's finished. Richard Fairhurst's RoutePlanner PCW is completed and available now, as opposed to previous times that it's been reported as finished. The PCW version is a lot faster because of the PCW's capabilities and M drive. It's available of 3" and 3.5" disc from ComSoft (0141 554 4735) at £25. I'll tell you more about it next issue when I have seen it running.

### ODDITIES

Some of my news comes from comp.sys.amstrad.8bit (csa8), the newsgroup on the internet. A gentleman called Peter Henry posted this month saying that there was a picture of a 6128 on the Microsoft website for downloading software. So I wandered across to have a look. And sure enough in the top left hand corner there is a tiny picture of a man using a 6128. I saved the picture and it should be on this page somewhere for your enjoyment. <<On the top right corner -John>>

Why a picture of a 6128 is on the Microsoft site is a mystery.

I also don't know who the person is or what he is using. If you can figure it out, let me know. For anyone with internet access who wants to take a look themselves, here's the address:

<http://www.microsoft.com/msdownload>

Also posted to the newsgroup this month was the telephone number for PC World, the UK computer superstore chain.

The digits of the telephone number is what struck us as a little spooky: 0990 464 464. Respect for the PC's forebears perhaps?

### CPC CD?

There is a CD rom of CPC games floating around in the UK. In fact, I think there may well be two. You won't be able to use these on your real CPC's, as they are files (emulators, disc images, games and utilities) for emulators on the PC (and Mac I believe). I shall try to find out more for next issue.

### PCW PROGRAM

John Hudson sent me a letter asking about a PCW program possibly becoming widely available and free to copy. Firstly I must apologise to John for not replying to him personally, time just slips away. But I have contacted the author and got a positive reply from him about the PCW program Xdate.

Somewhat embarrassingly (and no different to usual) I have actually managed to lose both John's original letter and the e-mailed reply I got from the author of the program. So I shall hunt for those and put more details next issue for those of you that really don't know what I'm talking about <<Which is most of us, most of the time -JB>>.

### THANKS EVERYONE

I would just like to say thank you to all those who wished me good luck on my college course - which is a lot of work but going well - and were worried about an accident I had at, whilst at college. I managed to throw myself down the stairs narrowly escaping a broken neck. I didn't actually break any bones, but they were (and still are) complaining quite loudly.

Nevertheless I'm on the mend and back at college (I've got to get used to those hatred things called "morning" again now). Thanks once again for every one's concern, it was much appreciated.



# Are You Game For A Game?

## with Angie Hardwick

*Well here you are folks your own game section instructions, hints, tips, multiface tips and keypress cheats that I have, hope you enjoy it and all your comments and tips would be most welcome. Angie.*

### AIRWOLF

Joystick only - As Stringfellow Hawker a former Vietnam chopper pilot and the only man in the free world trained to fly the billion dollar helicopter Airwolf.

You have been assigned a dangerous mission by the firm.

Five important US Scientists are being held hostage deep in the Subterranean base beneath the scorching Arizona desert.

As Hawker you must guide Airwolf using full strength capacities on a series of night time perilous missions and bring about the release of each scientist in turn.

Only destruction of the defence control boxes strategically positioned within the cavern will allow Airwolf to descend to the height of the base where the scientists are held. Good Luck.

### ALPINE GAMES

**Event 1** - Sking - Use keys 1 and 2 alternatively or slowly and rhythmically build up your speed. You must ski as fast as possible to reach the qualifying time.

**Event 2** - Ski Jump - Hit the Q Key when the power meter is at maximum. As the skier lands on the flat part of the ramp, hit the Q key again. Early or late jumps will result in a fall.

**Event 3** - Speed Skating - Use keys 1 and 2 alternatively to slowly and rhythmically build up your speed. You must skate as fast as you can to reach the qualifying time.

**Event 4** - Bobsled - Use the keys O (Left) and P (Right) to change the direction of the bobsled. The course must be completed without crashing to qualify.

**Event 5** - Biathlon - To advance to the targets press the Q key each time the meter it at maximum. Hit all the targets within the qualifying time to complete the first round of events. A life is lost each time you fail to qualify.

### THE APPRENTICE

Multiface Pokes:

919E 00 Infinite Lives  
897B 00 Infinite Lightning  
9DF8 \*\* \*\* = No of rings  
9287 \*\* \*\* = No of lives  
943D C9 No Music  
8B5F 00 Infinite time  
BD19 76 Faster game  
BD1A Faster Game

Come, tender novice, use your skill to try this game to end all games. But caution if by chance the apprentice dies then bid farewell to friends and fame.

Save the apprentice from his blundering spell !! Steer him around perilous pitfalls; through concealed exits! Does disaster await the apprentice? Play it and see.

Yes oh feeble trainee wizard, you have totally messed up your studies. In a vain attempt to make up for lost time you start playing with old incantations which catapult you into the maze - a real occult assault course. The only way to escape is to collect 10 magic power rings from 10 wizard examiners. Only then will you be allowed to reverse the incantations.

### HINTS:

10 wizards guard the entrance to the ring chambers. Only by bribing them with gifts will they open the door. Each wizard requires a different gift. All 10 rings must be collected to complete the game. The apprentice can destroy his enemies by

firing power bolts. But beware he cannot put out fires!! Use Joystick - pull back to pick up or drop items.

**KEYS:** Q is UP O is left P is Right A is Collect Space is Fire. Have fun.

### TALES OF ARABIAN NIGHTS

Controls: Joystick or ESC to redefine keys.

**The Game** - Guide Imrahil the Kalender Prince through the perils of many Arabian Nights. On certain nights he must gather Golden Jugs, engraved with letters in the correct order to spell out Arabian.

At other times he rides on rafts and flying carpets through Arabia, casting bolts of lightning at his foes. His quest for the Princess Anitra is long and difficult - many dangers lurk in the Arabian Night!!

*Well there you go folks that's my first contribution I hope you have fun, I shall be working for a time in alphabetical order but if I get any requests for specific games instructions then I'll try to oblige.*

*So come on all you gamers, if you've got any tips cheats then send them to me at:*

23 Station Place,  
Bloxwich  
Walsall  
West Midlands  
WS3 2PH

*Since this is the last issue before Christmas I would like to take the opportunity to wish you all a very happy Christmas and a very happy New Year.*

*Angie*



# Domonic Delving

by Peter Robson

*The hardest part of producing an article, for me anyway, is finding a subject that I have sufficient knowledge of to be able to contribute something useful. So in response to Johns plea in WACCI 115 and to try and save his fingernails and hair from total destruction, I decided to try and help. I seem to remember C.Robin's friend "Tigger" mentioning that he was working on an article about disc editing and was intrigued, unfortunately it must have vanished into the now infamous "Black Hole". However being of an inquisitive nature I decided to experiment for myself.*

## WARNING

At this stage I must insist that anyone who wishes to follow in my footsteps **USE A BACKUP DISC TO EXPERIMENT WITH** as meddling with disc editing can cause terminal damage to programs.

## INTENT

As a competent novice this article is intended to give a little guidance to complete novices and maybe encourage others to learn by experimenting themselves and perhaps let us all know by letter to FC or even an article.

## START TO DELVE

*I have in my collection PD Disc 102 and one of the utilities is DMON.BIN A disc tool by Ben Twijnstra (c) 1986.*

So nothing ventured nothing gained. RUN"DMON and off we go. The program loads and the first screen is a menu:

Logged drive: A  
Scanning switched OFF

Press A to select drive A:  
B to select drive B:

C to clean up directory  
F to format logged drive  
S to toggle scanning mode  
[ENTER] to examine logged drive

This is the stage to remove PD Disc 102 and insert your experimental one which should be a copy of any disc you may be interested in. The keypresses are fairly self explanatory however a few notes may

assist as there is no DOC file to accompany the program.

## UTILITIES

Pressing A or B selects the drive.

Pressing C sends you to the clean up Menu which contains easy to understand instructions:

Insert disc to be cleaned into drive A:, then press any key. After the directory has been read you are asked to select one choice: Sort,Purge, or Both ? (S/P/B)

**Sort** - Arranges the directory into alphabetical order

**Purge** - Gives a choice, pressing [ENTER] kills all invalid user Numbers (removes all ERAsed files from the directory and also old \*.BAK files except the current one), pressing [SPACE] retains the ERAsed files.

**Both** - Same as above but also sorts the directory.

Pressing F brings up the Format Menu and again is easy to follow:

Select format with cursor keys or [SPACE].

Press [ENTER] to decide,[ESC] to abort. IBM FORMAT (Whatever that is)

CP/M FORMAT (System or vendor format)

DATA FORMAT (The most commonly used format)

The above have a "Highlight Bar" that moves up or down in response to the cursor keys or space bar. Pressing

ENTER to select. You are then asked to enter the track number to start formatting from and the number of tracks to format (both in HEX ie. 40 tracks = 28 in HEX).

This can be useful if used VERY carefully to format part of a disc while retaining current files. Please make sure you are certain which tracks contain the files to keep otherwise they will disappear forever. Pressing ESC at any stage will abort you back to the previous stage. After selecting the format, track to start at and number of tracks there is one last chance to change your mind in the form of a "Highlighted" display of your selections with a Y/N prompt ie.

So you want to format tracks 09 to 1F inclusive as DATA Is that correct ? (Y/N)

Pressing S toggles the scanning mode ON and OFF. I do not know what the function of the scanning mode is (but it does allow you to examine discs formatted with the "Firmware Guides" big disc format), when on it prevents the use of some options in the editing menu so its best toleave it OFF for now.

## EDITING

OK that's the easy straightforward bit dealt with so lets get on with the show and have a look at the main purpose of the program, editing the disc contents directly. Please bear in mind that you are reading a novice's attempts and not an in depth disc editing tutorial.

For those that need it a short explanation of how the disc is divided up. All numeric references are in HEXADECIMAL (where



numbers are in blocks of sixteen instead of ten ie. 0 1 2 3 4 5 6 7 8 9 A B C D E F) There are forty tracks (00 to 27 in HEX) each track has nine sectors (00 to 09 in HEX but they are numbered 41 to 49 on System formatted discs and C1 to C9 on Data format)

sector should be given as 00 to 09 and not as displayed on the status line 41 to 49 or C1 to C9 system or data format respectively.

**M** - is the same as above except you specify the AMSDOS block number.

the real confusion sets in. The screen display consists of, the header including the status line and on the left the HEX bytes and on the right an ASCII window with a menu of options at the bottom of the screen :-

The above example shows a typical directory entry with the ASCII filter activated. Each directory entry consists of two lines 16 bytes long. The following explanation has been arrived at mainly by experimentation with a little bit of deduction so it is by no means complete leaving plenty of scope for the more knowledgeable out there to expand on the theme to the benefit of us all. (Did you ever complete that article mentioned in FC WACCI 99 page 9 Philip ?)

The first byte (column 0) is the user number, normally 00 but could be any other USER number set when the file was saved, thus revealing those files hidden from view when CAT or |DIR is used. If it is E5, this is USER number 229 which is where the ERASed files and the superceded .BAK files go before being lost forever. If you wish to recover an ERASed or old .BAK file, simply change this byte to 00 (remember to change the filename also if that name exists on a current file)

Columns 1 to B contain the filename and extension. One thing I have noted, but dont know the reason for, is under

```

<<<<DMON>>>>
Drive A: Track :00 Sector:C1 Block:00 Filter:ON

.DISC BAS..... Examination options:
.DISC DOC..... A - Toggle ASCII filter
eeeeeeeeeeeeeeee D - Toggle current drive
eeeeeeeeeeeeeeee E - Edit current sector
eeeeeeeeeeeeeeee F - Fill sector with a constant
eeeeeeeeeeeeeeee G - Go to sector/track
M - Move to specified AMSDOS block
S - Search for string
U - Return to utilities menu

CURSOR KEYS TO MOVE SECTOR WINDOW.

```

An AMSDOS Block consists of two sectors and run from 00 to B3 for data format or 00 to AA for system format.(that is 0 to 178 and 0 to 169 in decimal)

Pressing ENTER lets us examine the disc contents, starting with a screen display of the directory. For data format this is track 00, sector C1. (AMSDOS block 00) For system format the first two tracks are reserved for CPM so the directory is track 02, sector 41. (AMSDOS block 00). The screen display is fairly straightforward with the program title then a status line followed by a window displaying the sector contents on the left and a menu of options on the right:

**A** - toggles the ASCII filter on and off. It makes the disc contents easier to read as it filters out all non ASCII characters.

**D** - switches between drives provided you have a drive B plugged in with a disc installed.

**E** - allows you to edit the current sector, more of this in a moment.

**F** - allows you to fill the current sector with a constant. You are asked for the constant (in HEX) and then an "are you sure ? Y/N" prompt. I'm a bit vague as to what use this could be.

**G** - allows you to move to a specific sector/track. You are asked for the sector and track numbers (in HEX). Note the

**S** - allows a string to be searched for. After answering the questions about the start and finish track/sector or block numbers, ASCII or HEX input you give the string of up to 16 characters to search for. The search is then started of the area specified. A status line below the questions is updated as the search progresses. At the first occurrence the search pauses and the disc contents at that point are displayed. you then have the option to abort the search, go to the main screen. to edit the current find or to

```

<<<<DMON>>>>
Drive A: Track :00 Sector:C1 Block:00 Filter:ON

  0 1 2 3 4 5 6 7 8 9 A B C D E F 0123456789ABCDEF
0000 00 44 49 53 43 20 20 20 20 43 41 53 00 00 00 1E .DISC BAS....
0010 02 03 04 05 00 00 00 00 00 00 00 00 00 00 00 .....
0020 00 44 49 53 43 20 20 20 20 44 4F 43 00 00 00 16 .DISC DOC....
0030 06 07 08 00 00 00 00 00 00 00 00 00 00 00 00 .....
0040 E5 E5 E5 E5 E5 E5 E5 E5 E5 E5 E5 E5 E5 E5 E5 eeeeeeeeeeeeeee
0050 E5 E5 E5 E5 E5 E5 E5 E5 E5 E5 E5 E5 E5 E5 E5 eeeeeeeeeeeeeee
to
00F0 (pressing TAB gives the next page 0100 to 01F0)

[CTRL] A To toggle ASCII filter      [ENTER] to finish editing.
[CTRL] M To move to block at cursor  2*[ESC] To return to main screen
[CTRL][COPY] To flip HEX/ASCII editing [TAB] To flip between pages

```

continue the search for the next occurrence. This continues until the specified finish is reached.

**U** - returns you to the utilities menu (the opening screen display).

Right, I hope that was not too confusing, back to option E the edit choice where

column A, (the middle letter of the extension) files that are hidden from the normal CAT or |DIR have this byte different to the normal HEX equivalent for the letter ie. the extension .BIN would normally read 42 49 4E the hidden file reads 42 C9 4E. changing the C9 to 49 reveals that file and the reverse is also possible.



The remainder of the first line columns C D E and F I do not know what the significance of these bytes are except that under column F it is 80 on long files of more than 16k (*therefore needing two directory entries*). The second line contains the disc location of the files. each byte has the AMSDOS block number in HEX (*each block = 1k, the line has room for 16 blocks therefore long files require more than one directory entry*)

If you wish to view a file, move the cursor over the first byte and press CONTROL M, the program will move to and display that block number.

You may edit in HEX or ASCII using CONTROL and COPY to flip between the two. TAB flips between pages. (*a page = half a sector*) Pressing ESC twice returns you to the main screen. ENTER to finish editing gives you the options to write the edited sector to the disc (*press ENTER*), re-edit the sector (*press E*) or return to the main screen (*press M*).

#### DOCTORING

I haven't tried editing files mainly because I wouldn't know what I was doing, except for the Hi Score table of POWER TETRIS. Because the table was filled with the obscenely high scores of the originator and friends, it was impossible for normal mortals to get on the score table. So after a lot of trial and error I managed to delete all the names and scores. I did this by noting all the details from the score table, converting the numbers to HEX then locating the file SCORES.BIN using DMON and reducing the scores to zero and blanking the names.

It is too complicated to explain in detail here but I did discover that numbers are listed in reverse order on the disc ie. 37,554 decimal is &92B2 in HEX on the disc it appears as B2 92.

I imagine it would be fairly safe to alter ASCII files providing that the alterations could be contained within the sector, but it would be easier and safer to use a word processor for this. One thing I have tried successfully and that is repairing a disc with 3 faulty sectors.

I had a disc that when I tried to copy using DISCKIT it gave "*Disc error track 23 sector 6 etc.*". So having read about a utility that repairs discs with corrupted tracks by registering a dummy file in the directory covering the faulty sectors I

decided to try some thing similar with DMON. Having noted the faulty track and sector numbers and converted them to HEX I loaded up DMON and examined the faulty disc on reaching the corrupted sectors, the prog "*beeped*" and reported the error. Noting the block numbers where errors occurred I returned to the directory track and switched to Edit mode.

At the first available directory space I inserted a dummy filename and the faulty block numbers. Under column 0 the USER number 00 (*you can choose to enter a different number, 00 - 0F, to hide the file during normal CAT operations*) then under columns 1 to B the file name (*choose one you will not use in the future ie. ZZZZZZZZ.ZZZ or one that indicates*

#### THE ALTERNATIVE

PD disc 55 contains a disc editor by Michael Beckett called ED.BIN. Although it doesn't have as many utilities as DMON (*the lack of an ASCII filter makes the text less readable*) but it does have a DOC file and does have a built in facility to recover corrupted document files.

It does this by allowing you to allocate a filename to each readable sector and saving them as ASCII files which can be loaded and merged by your word processor.

To do this with DMON is probably possible but a bit long winded.

There are, I'm sure, many other disc editors available but these are the only two that I have looked at.

```

<<<<DMON>>>>
Drive A: Track :00 Sector:C1 Block:00 Filter:ON

 0 1 2 3 4 5 6 7 8 9 A B C D E F 0123456789ABCDEF
0000 00 44 49 53 43 20 20 20 20 43 41 53 00 00 00 1E .DISC BAS....
0010 02 03 04 05 00 00 00 00 00 00 00 00 00 00 00 .....
0020 00 44 49 53 43 20 20 20 20 44 4F 43 00 00 00 16 .DISC DOC....
0030 06 07 08 00 00 00 00 00 00 00 00 00 00 00 00 .....
0040 00 52 45 50 41 49 52 20 20 46 49 4C 00 00 00 00 .REPAIR FIL....
0050 6A 6B 6F 00 00 00 00 00 00 00 00 00 00 00 00 00 jko.....
to
00F0 (pressing TAB gives the next page 0100 to 01F0)

[CTRL] A To toggle ASCII filter      [ENTER] to finish editing
[CTRL] M To move to block at cursor  2*[ESC] To return to main screen
[CTRL][COPY] To flip HEX/ASCII editing [TAB] To flip between pages

```

*the purpose*) I chose REPAIR.FIL. It is necessary to pad out the file name with spaces (*byte 20*) to give the eight plus three letters of the file name (*DO NOT use a dot between them*). Columns C D and E contain the byte 00. Under column F I put 00 as well. It seems to have the effect of preventing the file being read. Trying RUN"REPAIR.FIL resulted in the disc drive whirring for a second or two then the ready prompt. (*I think it reads the directory comes across the 00 byte and so doesn't bother trying to read the blocks. This is only my guess though*). On the next line the faulty block numbers are inserted, in my case 6A,6B and 6F. See the example below.

#### AND FINALLY

The original intent with this article was to assist our hard pressed editor with something to fill the pages of our magazine and also to encourage those like myself who are at the bottom end of the learning curve to share with us their experience gained from messing about with our machines.

I hope I have managed, in part at least, to succeed.

*My best wishes to you all.*

*Now get writing.*

*Peter Robson*



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