WACCI

THE BEST CPC MAGAZINE AND PREMIER CPC CLUB

ISSUE 116	£2.00
October	1997

This month we celebrate
our 11th birthday.

Benefits of Membership

* The best magazine for serious CPC users.
* Index covering issues 1-104.
* Telephone helpline (indispensible)
* 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*

Production Method

WACCI is created using Protext and Promerge on a CPC 6128+ and laid out using a CPC and with lots of help from a *PC*, and printed on a Epson Stylus 200. WACCI is printed and collated by ProntaPrint! . WACCI is distributed by the Bowley family who always stick the labels on wrong.

Contents

Its WACCIs Birthday

WACCI has been going for 11 years, who would have thought it possible for a magazine that supports a CPC would still be going strong to-day. The credit for this must belong to you the members. Without your continuing support WACCI would not be around to-day, so give yourself a big pat on the back and a very happy Birthday to us all....

CONVENTION
The convention this year was a big success and again this is all down to you who supported us in this event. I know more members would have liked to come and hopefully next year you will get the chance, so fingers crossed.

WACCI got £203.05 from Market Stall sales, Raffle, Binders, PD copying, and from the **Ho Mummy** game challenge, the winner of a silver joystick was Francis Wolfe, so well done Francis.

Carol was very busy going around with her camera again and some good photographs were taken and you can see some of them in the Convention Report by Angela Cook and others.

WHO'S TO BLAME
If the photo's don't re-produce very well then the blame lay on my shoulders for it is I who decided to use scanned images instead of using the photographs.

BIG THANKS
I would like to thank Angie who worked so hard and never seemed to rest for a minute, so thanks Angie from us all.

EURO WACCI
Philip DiRichleau with the help of Richard Fairhurst launched the first issue of Euro WACCI which seems to be

going down very well here and overseas, so if you would like a free copy send a 3.5 or 3" disc together with a SAE to:

Philip DiRichleau
32 Arboretum Avenue,
Monks Road,
Lincoln,
LN2 5JE

Or on the other hand you can obtain a copy from Doug Webb, but a charge of £1.00p would be payable to WACCI.

Well done Philip keep up the good work that you're going. A review of Euro-WACCI will be in a WACCI near you soon.

SORRY
This is a message for John Jordan over in Ireland I'm very sorry I've haven't been in touch, but I will answering your letter in the next few days, so please bare with me.

ARTICLES
After my plea for articles in last months WACCI, I have had a few articles sent to me which I'm please about, but I do need more **LOTS MORE!**

Geoff Perry wrote a letter to me with an idea on a article all I can say it looks

goods and I look forward to receiving it soon.

WHAT CAN I WRITE ABOUT
It's up to you really it can be on your favourite game, utility or even a short amusing story, so what are you waiting for?

PC OR NOT PC
After a lot of talking your committee has decided to give the go ahead for a PC problem page, your questions needs to be sent to Angie Hardwick giving full details of your computers set-up.

NEWS FLASH
Richard Fairhurst has informed me that his infamous Route-Planner for the PCW is now ready for your orders, please place your orders with Peter Campbell of ComSoft.

His address can be found on page 25.

A Review of this version of Route-Planner will be in WACCI soon, but why is WACCI doing a review of a programme for a PCW?

The reason is that Route-Planner was completely written on a CPC using Maxam.

IS WACCI GOING TO BECOME MULTI-FORMAT

The answer is really up to you the members of WACCI in the past a few members have given their ideas on how WACCI can survive the future, but I can say this here and now that articles relating to the CPC will be given **TOP PRIORITY**.

CONCERNING THOUGHT

Is the interest for the CPC dying? Many members have left WACCI to up-grade to a PC although membership is holding out to around 270ish is still not enough.

WACCI sells such as discs, PD and other items has been dropping of over the years. WACCI needs this income to help to pay the running costs of producing the magazine, so what can we do about it?

This question is open to debate since WACCI belongs to the members it is **VERY** important that you let your views or ideas be known, so please write to Fair Comment we need your input and we need it now, don't leave it to others it is your club each and everyone of you.

THIS ISSUE

A lot of hard work has gone in to bring you this issue which I hope you will all enjoy and all I can do is thank all those who have contributed in same way.

MY SPECIAL THANKS

This must go to Angela Cook for a excellent convention report.

SW CONVENTION

Did you enjoy the WACCI Convention at WALSAL ?. Didn't GO ?, well John very kindly offered me the opportunity to let you all know about another Amstrad CPC user's Convention that you are all invited to attend.

The CPC SOUTH WEST's third Convention is happening on the 18th October 97 here in Plymouth. The cost is ONLY £2.00, 10am to 4pm. Oh! and yes you can be sure of a great welcome at the door and help your self to **FREE** Tea-Coffee and Biscuits.

CPC South West is not only for West Country members, a lot of our members also belong to WACCI, UAUG and subscribe to other Disczines etc. Believe it or not, but the Roads do pass Bristol and come right down to Plymouth and beyond, and yes there is also a Train service right into the heart of this IDYLLIC city of ours. Just follow the M5 and just pass Exeter, there is a Freeway (A38) Dual Carriage way then look for the A374 to the city centre, continue on this road passing the River Plym on your left, this will lead you to an old Bomb Church in the middle of a round about, see map enclosed of how to get to the centre in LOOE STREET.

The Train Service to Plymouth Station is only 1/2 a mile away from the centre, there is a COACH station thats only 100 yards from the centre.

The Venue for our great day is in an 18th century building, the Hall can hold 150 people, it's very near the famous Barbican where the Pilgrim Fathers started their voyage to discover America, and only a few hundred yards from the Historic Bowling green where Sir Francis Drake masterminded the sinking of the Spanish Fleet. That's the History lesson over with, except to let you know the Name of the Centre.

VIRGINIA HOUSE SETTLEMENT.
40 LOOE STREET
BRETONSIDE.
PLYMOUTH.207077

There will be all sorts of Goodies on sale from Angela and Arthur of Merline-Serve, and members will have the opportunity to sell surplus equipment or make a purchase, we would like to see you here at Plymouth. Go on make a week-end of it in Plymouth. Thanks John and to the members who have read this.

Regards
Dave
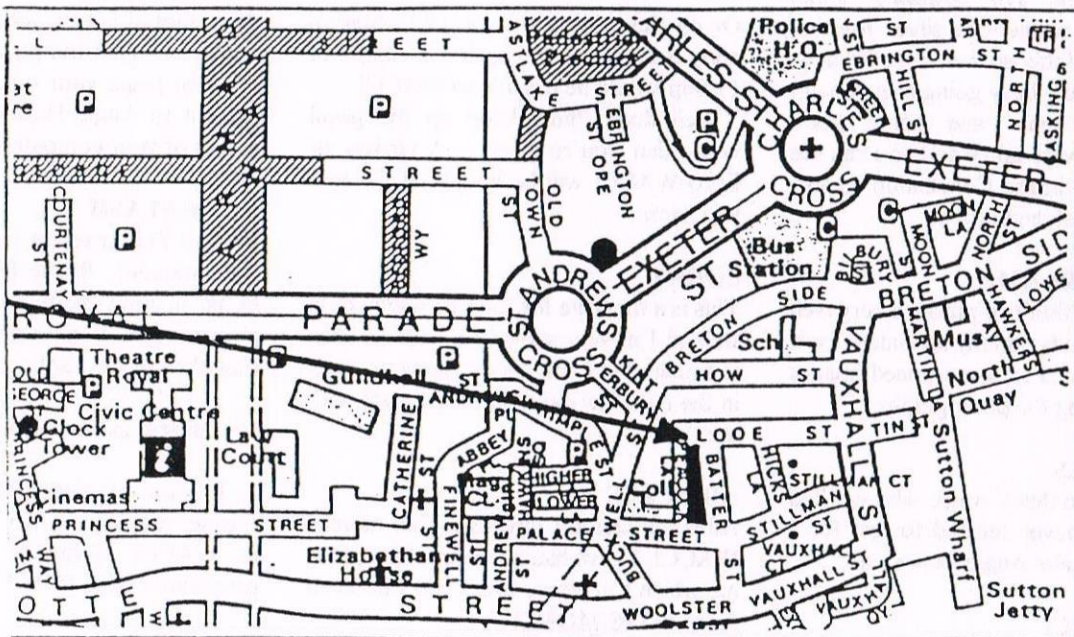
Fair Comment

with Philip DiRichleau

Letters
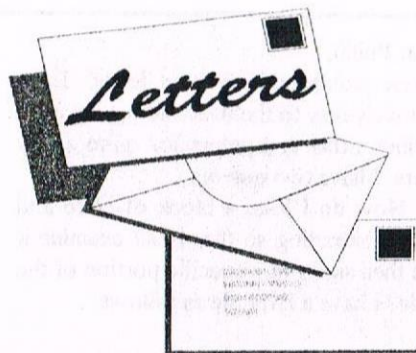
Dear Philip,

Regarding Paul's sudden and regrettable resignation from WACCI, I have, in an attempt to become cognisant with all the facts of the case, written to and received replies from both of the parties involved. I've thought long and hard before writing this letter, which will be my last on the subject as I feel that, sad though the situation is, it is something very personal between two other people and strictly speaking, none of my business.

However, as a long time member of WACCI it behoves me to make my thoughts on the subject known, and, being a bit past the three score and ten marker, perhaps I can take the position of one of those "greasy imminences" you hear so much about!

First, please or offend, the problem seems to revolve about the real or imagined intrusion of BTL into WACCI space. Certainly it appears that offensive and hurtful remarks have been made, and foul language used, and this cannot be tolerated, either verbally or in print, and I would earnestly council all parties to think very carefully before committing their comments and criticism to paper and/or e-mail etc.

Perhaps it would be helpful if BTL were to withdraw all contact with WACCI for the time being, to allow this upset to simmer down. I do realise that there are members with a foot in both camps, which might cause a difficulty, but in the continuing interest of the WACCI membership, I feel that they would be wise to separate their involvement until happier times.

As to the aggrieved parties within the WACCI domain, I respectfully suggest that they withdraw to their respective corners and consider their position in

quiet contemplation, and perhaps this unfortunate affair can be brought to a satisfactory conclusion.

My final word! Rest assured that any copy that comes to me for layout containing foul language or unnecessary expletives will be rigorously edited. There's enough thrown at us every day from the media without it entering the hallowed pages of WACCI. So There!

Ron Izett
Ponterwyd

<<*Oh what a can of worms this entire, messy business has turned out to be. Might I make it quite clear, before I start answering the comments here, and others that have been floating around of a similar nature, that the following are the views of one Philip 'Tigger' DiRichleau and do not necessarily reflect the views and opinions of other WACCI members. I welcome other views each and every month in the WACCI open forum known as Fair Comment.*

Firstly, let me state once and for all, that there was never been the slightest idea of there being a WACCI and BTL merger. Any such rumours were created by a few people who seemed to have more time on their hands than commonsense.

Secondly, what comments are made on the Internet between different people are NO business of WACCI. They are the comments of those people in question and should not infest the way that WACCI is produced, edited or in any way written.

Thirdly, BTL is a fanzine, that is all, no more and no less. It is not a group or a collective. To have writers of BTL withdraw from WACCI, even on a

temporary basis would be disastrous, since those who write for both BTL and WACCI are, quite probably, the most active, skilled and talented people on the CPC Scene at the moment. Any separation would be jumped on instantly by those same people who created the rumours in the first place and happier times would not occur.

Finally, what has any of this got to do with the lump of silicon, plastic and metal that I'm typing this up on. WACCI is meant to be fun, meant to be enjoyable. It's a hobby. So what if WACCI had 47 ways of creating an ABBA switch, that we have 194 different methods of creating a side switch, that ProText is mentioned 13 times on every page and Merline Serve is plugged in every single Fair Comment. Who really cares? We enjoy making this magazine, the readers enjoy reading it. Anything else is, to be honest, none of our business, utterly boring, self-destructive and people of all sides should stop using the good name of WACCI to further their own arguments, causes and grievances.

A lot of those people who are trying their hardest to get rid of any BTL writer from within WACCI, and I have been targeted myself I might add, might spend more time helping to produce a magazine each month, than making life difficult for those of us who actually have to do it.

I discounted Ron totally from that last comment, incidentally, since I am fully aware of the massive amount of work that he had done in the background towards creating this magazine.

Alright, I've thrown down the golden gauntlet in typical 'DiRichleau' style. I look forward to readership comments, views and ideas. All are welcome.

-Philip>>

Dear Philip,

Please excuse this written letter. I am relatively new to the Amstrad having used various other computers for quite a few years. I have two queries.

1) How do I load a block of code and stop it executing so that I can examine it and then save out a specific portion of the code? I have a BIN file as follows:

START	END	EXEC
0040	A2EB	1F2C

I can't find any software that will allow me to load such a large block and a Multiface is no good as it only snapshots. Can you suggest any software or hardware that will achieve this? On other computers that I own it is very easy.

2) I have some 464 games that fail to load on my 6128. They fail with the message **"MEMORY FULL"**. Is there any way that they can be loaded?

Donald Hay
Atherton
Manchester

<<Ouch Donald. To answer you first question, the only way I could think of would be to load the file into the second bank of memory. Even if you could get it loaded into normal memory (which is just about possible) there would be no room left for any program with which to study the code.

If I was working on such a thing, I would, most probably, buy a huge amount of paper and try to dissemble or dump the file to a printer. If there is another way then I'm sure I'll be told all about it next month.

Question 2. The problem here is that the games were written with the 464 in mind, running of tape, with AMSDOS installed.

The disc takes a certain amount of memory, and the games tries to take this memory, which it can't, so it all fails miserably and lets you know about it with an 'Out Of Memory' message.

One possible way around it is Bonzo from the PD Library. It copies Tapes to Discs and relocates them slightly. It works with some 464 games but not all. If you could let me know which games they are, I could see if I can come up with a better solution. Oddly enough, I've never had a program that's refused to load on my 6128, but I know they exist (odd that isn't it). all the best -Philip>>

Dear Philip, I'm sorry this letter is on paper, not a disc. But at this distance it seems best. I just want to ask about a recurring problem with my keyboard (CPC6128), and find out if anyone else has it and if there is some explanation which might help me to deal with it better.

For ages now, at intervals usually about 6 or 7 months, I've found I have lost the function of certain keys. Mostly this affected figures 3 and 4, but as it happens the latest time (yesterday) was loss of figures 7 & 8. Long ago I got brave about looking inside the keyboard, thanks to the excellent article by Bob Moffat (WACCI 88) on replacing disc drive belts. So I have been doing a job on the problem and this seems to work but I don't trust it, because it only lasts a limited time and I don't at all under- stand the reasons. If I get access to the keyboard membrane thing and give it a good wipe with clean cloths or sometimes paper towels, paying special attention to the part between the halves of the connecting cable, things seem to come right again. One time I even went so far as to use a weak detergent solution, but I thought that was maybe risky, so I won't repeat it unless desperate.

There doesn't seem to be dirt collecting on the membrane device but I notice it often feels a bit sticky before I clean and dry it. Is this perhaps climatic due to Aukland's humidity? Am I on a correct track? Does anybody know really what this problem might be, and how it is best addressed?

Yours sincerely
Michael Briscoe
Aukland
New Zealand

<<Hi Michael. At last, a Techno-Rat question. Yes, you are on the right track. You need to clean the thing totally.

You need to take the computer apart and remove the keyboard section from the computer. Take the Keyboard section apart and remove the membrane and wipe it down carefully. Put it aside.

Now, don't panic at this next bit. Carefully remove any dust from the thousands of little springs that you can see on the underside of the keys and then put the base-plate back on one more (leave the membrane aside from the moment, you don't want that anywhere near the next stage).

If you have a shower then then that's ideal, otherwise, put on the cold tap to your bath at maximum pressure. Blast out any dirt, dust and other assorted bits that have got caught beneath the keys in the decade or so since the computer was made (I kid you not).

Next, get some soap or shaving foam (I still kid you not) and either a nice big brush or, ideally, a shaving brush is perfect, and scrub away at the keys until they are nice and clean and totally over is froth, foam and generally lots of bubbles.

Blast away under the shower or cold tap one more. Remove the base plate once again and wrap up both (very careful of those springs) in a nice fluffy towel. Leave to dry for a while or three.

Once this is done (a hair dryer on a lower setting will speed things up a little), put the whole lot back together. Now, clean the little edge that fix into the circuit board with alcohol (very cheap aftershave or perfume will do at a pinch) and then put everything back together.

Seriously now, I'm not kidding. Cleaning away all the dirt under the keyboard does help a lot (I've had an almost identical problem with my keyboard not so long ago). Just make sure that the membrane is well away from any water. Some people will suggest a hover to do the same job, but with splashes of tea (with sugar), sweat (with sugar), assorted other liquids (with sugar), it can get very sugary and very sticky under there and a hover will just not shift it. all the best - Philip>>

Dear Philip,

I wonder if any of your mathematically-inclined readers could answer a little problem I have.

I am interested in the theory of numbers and use my 6128 for this. One of my favourite books is "Recreations in the Theory of Numbers" by A.H.Beilier (Dover Publications Inc. 2nd ed. 1966). On page 234 is a reproduction of a Factor Stencil which is a punched card perforated in those cells having 29 as a quadratic residue. Try as I may, I cannot agree with the perforations.

If anyone has a copy of this book, I should appreciate any comments.(As the book was published over 30 years ago, the author must surely be dead so I cannot ask him).

Regards
John Shaw
Wargrave-on-Thames

Dear Philip,
Can you help me? I am looking for a program that will do calculations. I know that if I press the "?" key on my Amstrad it will do the sums for me. But how do I get it to print it out on paper?

Nora Lees
Birmingham

Dear Philip,
How wonderful! I've just qualified as an electronics engineer. A new drive belt fitted successfully - thanks to SD Microsystems' reviver kit, Derek Osborn and that pioneer who first suggested such a simple cure for a possibly terminal problem. Heroes of WACCI 1st Class each and every one of them.

I know that to most members major CPC surgery is something you do every day before breakfast but I've never wanted to see the grisly bits inside the carcass. I could glimpse black and white diagrams in WACCI without a hint of curiosity to see the technicolour reality - there was just a compulsion to turn the page rapidly.

But that scary message kept flashing up on the screen - **"Disc Missing"**. I struggled on using the B Drive - Brunword of course automatically selects the correct drive so no problem there! - but it's a bit fiddly with other stuff. So I sent off my tenner to SD and got in return a large rubber band, an alcohol soaked pad, a cotton wool bud (not to be inserted in your ear) and a sheet of instructions. Not a lot of raw materials for £10 but worth nearly every penny for the step-by-step instructions. Yes it all worked OK in the end but other readers who haven't yet had to take the plunge might like to know the unexpected problems that I came across. And if you find yourself thinking on the lines of

"Silly fellow, how could he be so technically incompetent?", so be it.
First, take the back off. Sounds easy - just undo all visible screws. Result - back still immovably fixed. Try gentle easing with fingers - then try not so gentle easing with small screw- driver and small hammer. Still fixed tight but the casing now has a few scars. Having looked closer I see a sticky label which says **"Guarantee invalid if seal broken"**. What seal, where is it? Maybe it's somewhere out of sight and has set rigid over the years. Absentmindedly drinking coffee I fiddle with the sticky label and as bits peel off I see hole with a screw at the bottom. You guessed it - the final screw holding back to front. Secondly, identify the disc drive. Pretty easy as it's still attached to the front slot and I recognise that as the place I push in the discs. But then you have to remove this front cover plate.Will I know what it looks like afterwards? Oh well, press on. After all, second-hand 6128s are cheapish.

Thirdly, unscrew the circuit board. Before you do this it's probably sensible to draw a little diagram of the position of the screws. Different sizes but they are similar enough to be made to fit the wrong hole - probably a bad idea. In theory according to SD, at this stage you might be able to reach the drive belt. I certainly couldn't as the board wouldn't lift away nearly enough,so decided I just had to detach the drive completely and release the board itself as far as possible.

I pulled off the two fairly large connectors at the back and after some searching found two tinyish connectors holding the circuit board to the mechanical bits. To unplug or not? They looked awfully fiddly and delicate - and how would I get them back on? But my banana fingers still couldn't reach the drive belt, so I took my longest nosed pliers and gently wiggled the connectors off (it seems best to grip the bottom of the connector rather than the middle).

Even then there was technicolour vermicelli holding board to mechanics and I had to stretch those little wires dangerously tight to ease off the old belt and loop the new one over the pulley and post. Impossible to see whether it was running without a twist so I had to hope it was flat. **"Now reassemble in reverse order."**Ha! What frightening words.
"But first clean the drive head." The what? **"You can gain access through the top of the drive."** But what does a

drive head look like for Sugar's sake and which is the top now the whole caboodle is lying on its side on the bench? There's a little white pad with a tiny wire across it in about the correct place.

It could be a chip or something for all I know - still, everything's better for a good clean isn't it? Out with the cotton bud and peel open the lint free IPA-Saturated Woowwwwww! What is that smell? The last time fumes like that went up my nostrils I was drinking a tot of rum at some time after midnight in a dark smoky pub at the craggy end of Cornwall. "125" was the name and also the proof strength and it was only rumoured to be rum. Might it have been Isopropyl Alcohol? Anyway I swabbed away at this possible drive head and it didn't dissolve so I set about reassembling.

After much fiddling, connectors are reconnected and the board is screwed down again but guess what - a little brassy pin thing lies on the bench. This must be the write-protect pin that SD warn you against losing. I haven't lost it but where did it come from and how does it go back in? However closely I look at the drive I can't see where it might go and SD's instructions ignore such details.

There is no option but to unscrew and disconnect- connect all over again. Still no clue.

Then I remember Derek Osborn's letter in April WACCI. There are clues here. The pin has to drop through a hole and press against a switch. I gaze at a disc - flick the write-protect a couple of times - put the disc in the drive and try to see where the pin might drop through - lift up the circuit board - spot a pin size hole with a strip of metal above it - get tweezers - drop pin in hole with pin- head on top - hope for the best and reassemble again. Thank you Derek, it is certainly very difficult to explain but your explanation was enough.

While I was in there I thought I might do a little general cleaning under the keyboard. Quite a few cobwebs about and lots of dust. No doubt still under the influence of IPA fumes I rashly undid 3 big screws and the keyboard came away from its casing - I thought all the keys might spring into the air like Scrabble pieces but they all stayed in place. Lucky really - I can remember   1 to 0 and

QWERTY but it's a bit hazy after that. So into the home straight - screw the casing to the base, watching out for trapped wires and homeless spiders running for cover and away we go with all drives firing.

Just one more embarrassing admission. When I'd finished I did for a moment seriously consider throwing away SD's instruction sheet after transferring it all to disc. But only for a moment - honest.

Patrick Hanlan
Liskeard

<<Hi Patrick I had a problem with my 3" drive a while a go, the dreaded disc missing massage appeared on my screen and I couldn't not save anything to disc which was very annoying to say the least, since I just spent ages on laying out pages for WACCI and to make matters worst I didn't have my 3.5" drive connected to my CPC6128+ at the time, so all I could do was to turn off my CPC and cry.

When I took my 3" drive to pieces I lost the little pin that you mentioned in your letter and had to set about making another one, so I got one of those pins that dress makers use and cut it down to size (after my sixth attempt I got the right size) then I carefully placed it into the little hole and re-assembled the 3" drive once back in place I inserted a disc and typed CAT and then I got disc missing again and then I realised that I didn't change the drive belt (silly me or words to that effect), but alls well now. -John>>

Brian Watson goes Bonkers (so nothing new there, then) with Maxam.

If you are following Richard Fairhurst's excellent machine code tutorial in the pages of WACCI, you may be hankering after getting "stuck in" on your own CPC.

It is possible that you already have a copy of Maxam on disc or rom and use it, or would LIKE to use it in association with Protext, to assemble your code but you have no manual for it. This will be hampering your use of the program considerably, so WACCO, current owners and publishers of the program, have come up with a special offer, exclusive to WACCI members.

For just one month from the appearance of this in the WACCI magazine

(OR UNTIL ALL OUR CURRENT STOCKS ARE EXHAUSTED, WHICHEVER COMES FIRST)

WACCI members can part-exchange their current Maxam discs or roms for a new one in its very latest version plus a copy of the manual. Please note that this offer DOES extend to include, shall we say, **"unofficial"** copies. Yep, pirate copies are included, and no further questions will be asked or records kept!

Now reprinting manuals properly *(which we have done to provide for this offer)* costs a lot, but the price of the upgrade option is, we believe a real bargain; just half the usual selling price of Maxam - that's £7.50 for the disc version and £10.50 for the rom version, both supplied *(with the manual)* on a **"part-exchange"** basis.

Those without Maxam are not forgotten, either. For those without one to exchange, official or otherwise, the prices are just £2 more on each case.

That makes the disc copy £9.50 and the rom version £12.50. In all cases the quoted price includes postage, packing, and anything else you might expect to find added on top to bump up the price! The only bad news is that, at these prices, there can be no further discounts offered.

And there's more. Each Maxam shipped under this offer will be accompanied by a catalogue for the Pipeline Tutorial series. These were written by Robin Gilbert for the CPC range and can be collected in any order that suits the user's purposes to build into a very comprehensive series covering many aspects of understanding and programming your computer.

They are now revised and printed on A4 paper in a lie-flat format so that you can refer to them while you follow the practical examples given with each section. In some cases there are files on disc to accompany the printed Tutorials and these are supplied at no additional charge.

The Pipeline Tutorials do not **RIVAL** Richard Fairhurst's series; rather they complement it by coming at many of the topics which he is covering from a different direction, as well as providing a reference work for all the machine code instructions, as well as *(another!)* introduction to BASIC and its use on the CPC.

Once you have seen the detailed catalogue you may well wish to order one to see if their style will suit you. Well, to get you started on that you will receive a £5 voucher to wholly pay for your first one ordered from any of the seventeen now in stock.

This order is only available from Brian Watson, and only for a limited time *(see above)*. The address is in the advertisement elsewhere in this issue, and payments should be made payable to **"BA Watson"**. Please don't forget to include your address!

PS: If you'd **JUST** like the Pipeline Tutorials catalogue, an A4 SAE to BW's address will bring one winging to your door.

EDITORS NOTE:
A little while a go in issue 115 to be precise I stated that "WACCI would like to form close relations with all CPCers around the world." This is still true to-day since this would help WACCIs future.

A few years a go WACCI didn't need any help to survive, but times have changed we need to share information with **ANYONE** and **EVERYONE** that supports the CPC, because if we don't, we will all disappear.

Finally BTL writers has **NEVER** sent me any material that contains foul language. WACCI is not the place for it and will never be.

John

First Steps In Machine Code

by Richard Fairhurst

Richard is back with another chapter of First Steps In Machine Code. If you got any questions about this series so far then please drop me a line at 97 Tirrington and I'll past it onto Richard. John

There are a number of **"exchange"** operations, to swap values. They are:

EX DE,HL   <- exchanges values in DE and HL

EX (SP),HL <- exchanges two bytes from location SP with contents of HL. Also EX (SP),IX and EX (SP),IY.

EX AF,AF' <- exchange AF and the alternative AF *(not very useful on the CPC).*

EXX   <- exchange all other alternative registers *(again, not very useful)*

I have briefly mentioned the **"stack"** in connection with the register SP.

The easiest analogy for the stack is that of a pile of paper. It starts off empty, and you can put values from registers on top *(this is called "pushing")*.

Then you can take them off again whenever you like *("popping"),* but you can only take the top one off.

You can PUSH values onto the stack and get them back later, probably to restore values which have been changed in the meantime, by POPping. You can PUSH and POP AF, BC, DE, HL, IX and IY - note that you can only store register pairs on the stack.

I mentioned before that to emulate an **"LD HL,BC"** instruction or similar, the following bit of code would be necessary:

```
        LD H,B
        LD L,C
```

Using the stack, there is another way of doing it.

```
        PUSH BC
        POP HL
```

This PUSHes the value in BC to the top of the stack, and reads it back into HL. Any such combination is possible.

SP, the stack pointer, indicates the **"top"** location of the stack in memory. Why the inverted commas?   Well, unfortunately, it's not quite that simple. The Z80 actually stores the stack like this:

```
    1st value PUSHed  V
    2nd value PUSHed  V  - downwards
    3rd value PUSHed  V
```

When you POP a register, you are actually taking the bottom one, i.e. the last one you PUSHed. So the **"top"** location referred to above is actually the bottom one! However, you don't need to know this in regular machine code programming, where you will rarely meet the SP register.

So far I have only dealt with moving registers and bytes in memory about. This is all very well, but doesn't anything actually happen? After all, you can't write much of a program with these instructions!

The instructions, as mentioned before, are stored in memory, each one taking up one or more bytes. For example, you might have:

Location	Instruction	Bytes
#4000	LD HL,#C000	01 00 C0
#4003	LD (HL),#61	36 61
#4005	INC HL	23
#4006	LD (HL),#1F	36 1F

But programs wouldn't be able to do much if they always had to run sequentially like this - what is needed is

some instruction to go from one location to another and execute instructions from the new location, a bit like the **"GOTO"** command in BASIC.

In machine code, this is called **"jumping"**, and the instruction is **"JP"** *(short for jump).* Say that, at the end of the program above, we wanted to start executing instructions stored from address #8000. At the next location, #4008, we would put:

        #4008   JP #8000   C3 00 80

You can also jump to an address contained in HL, IX or IY:

```
        LD HL,#8000
        JP (HL)
```

Even with these new instructions, however, the possibilities are still rather limited.   A   feature   giving   you **"conditional"** jumps - i.e. jump only if a certain condition is true - is implemented on the Z80, and it uses JP in conjunction with the flags in the F register.

JP C   <- jump only if carry is 1

JP NC <- jump only if carry is 0

JP Z   <- jump only if the zero flag is 1

JP NZ <- jump only if the zero flag is 0

JP PE <- jump only if the parity flag is 1

JP PO <- jump only if the parity flag is 0

JP M   <- jump only if the sign flag is 1

JP P   <- jump only if the sign flag is 0

These are used in the same way as the basic JP instruction:

```
        JP C,#8000
        JP NZ,#0038
```

Note that there is no JP ..,(HL) or JP ..,*(index register)* facility.

There is also an instruction to jump a certain number of bytes FROM the current position. This instruction is JR, **"jump relative"**.

```
JR #03
LD HL,#5000
LD BC,#001A
```

Can you see how this has the effect of only the one instruction, "LD BC,#001A"? The "JR #03" instruction tells the computer to jump forward three bytes. It does this, and in doing so misses out the next instruction, "LD HL,#5000", because this is three bytes long (21 00 50).

You can perform conditional relative jumps, but only using the carry and zero flags.

```
JR C,6       <-- or JR NC, of course!
JR NZ,-32    <-- or JR Z
```

You might be wondering how the latter instruction is stored in memory. After all, one byte can only hold numbers from 0 to 255: not negative numbers!

However, there is a system called **"two's complement"**, which lets you, store a number from -128 to 127 in one byte. Here, by way of example, are the numbers from -10 to 10 in two's complement:

Decimal	Two's complement (hex)
-10	F6
-9	F7
-8	F8
-7	F9
-6	FA
-5	FB
-4	FC
-3	FD
-2	FE
-1	FF
0	00
1	01
2	02
3	03
4	04
5	05
6	06
7	07
8	08
9	09
10	0A

+127 is 7F in two's complement (hex) and -128 is 80 (hex). This system is the same used by certain index register instructions:

```
LD A,(IY-5)  is, in bytes,   FD 7E FB
```

You can only have relative jumps from -128 to 127, obviously. The computer counts from the byte FOLLOWING the JR instruction:

```
JR FE ..
      ^
   this is 00
```

The above example, then, will be an endless loop. Why? Well, FE is -2 in two's complement, and 2 bytes before the start of counting is the "JR" instruction. So the computer just keeps looping back on itself.

A variation of JR is "DJNZ". Txis will first of all perform a DEC B instruction and then, if B isn't zero, it will carry out the jump. Otherwise it will proceed to the next instruction. You can see how this is useful in constructing simple loops...

```
LD HL,#0000
LD B,#5
INC HL
DJNZ #FD
```

This will increase HL five times.

The final instruction is this category is "CALL". This is like GOSUB in BASIC, and acts as a JP initially: then, when it meets a RET instruction, it will RETurn to the instruction after the CALL instruction. For example...

```
#4000   CALL #BC02   CD 02 BC
#4003   LD HL,#01AF
```

This calls the routine at #BC02 (a built-in routine to reset the screen colours) which returns to the instruction after the CALL.

The location to return to is stored on the stack. So you can't write code like this:

```
#4000   PUSH HL       E5
#4001   CALL #8000    CD 00 80
#4004   ...
#8000   POP HL        E1
#8001   RET           C9
```

This will put HL on top of the stack first, but then the CALL command will put #4004 on top of that. The POP HL will then put #4004 into HL rather than HL's original value, and RET will return to the address HL instead of #4004! Code in that style, therefore, is to be avoided.

In a similar fashion to the JP instruction, you can have conditional CALLs and RETs.

```
CALL C,   CALL NC,   CALL Z,
CALL NZ,  CALL PE,   CALL O,
CALL M,   CALL P
```

```
RET C, RET NC, RET Z, RET NZ,
RET PE, RET PO, RET M, RET P
```

We will discuss how you can use these conditions more fully in later chapters.

Richard Fairhurst

A WACCI Day

by Angela Cook

What's that saying, "Balancing on a knife edge" is it? That's what the convention was like. It was happening. Then it wasn't. Then it was again. Then it wasn't (yet again). And now it has.

IN THE BEGINNING

Three months to go before the convention but it really doesn't seem that long. I expect it shall whizz by... Exactly one month to go. I've got to book where we're staying. I don't think I could cope with another four hour drive on two hours sleep then the convention all day and getting back home... One week to go, rooms, stock to pack, things to organise, alcohol to buy... And now it's happened.

A thoroughly great day, best convention yet. But here I am at the end of the weekend, I shall start at the beginning instead.

THE OTHER BEGINNING

Dad and I stayed overnight in Birmingham this year, as did other WACCI members, Frank Frost and his wife for example. Occupying valuable room space at a Forte Travelodge with us were STS, the mob behind BTL. After dodgy solenoids and spuing oil eventually let us arrive at Birmingham, an entertaining evening was had paying huge sums of money in Burger King and generally drinking an awful lot.

Next morning, donned in our BTL shirts, we all felt fine and got to Bescot in reasonable time to setup before the flood of CPCers burst through the door. Okay reality check; John reckons on about 86-90 people in attendance, some WACCI members, some not. It certainly didn't seem any less people than last year.

John tells me WACCI acquired two new members *(hi Emmanuel and Paul)* and a re-subscription on the day. But I digress.

I GET KNOCKED DOWN

BTL shirts? Yes, you heard correctly. Some of you may remember from last year the lads all wore white T-shirts with a perversion of the British Telecom logo on it. This year the design on the front was of the Intel Inside logo, re-written to say "Libel Inside". On the back were people's names; Richard Fairhurst was "CRTC", Simon Matthews was "Ratz", Simon Green "Doc", Richard Wildey "Widdley", Rob Scott "Hangman" and mine was "Merline". There was also "BTL sphinctour 1997" printed on the back.

DRUM ROLL PLEASE

Uncle Clive Bellaby attended with wife Josie. Nice to see two well worn WACCI faces *(oops)*. Clive took a much more active role this year, most notably I think calling out the raffle. Both Clive and myself had a winning ticket, Bob Houston won a colour monitor to go with a keyboard he won last year - though I don't think he ever received it. Sam Holmes made it from Worthing, dragging long-suffering dad Peter with the promise of stamps. Peter didn't get any stamps, but Sam won a complete 6128 that Dave Simpson donated. Frank and Janet Smart won a knitted WACCI 97 poster, as they did last year. The "poster" was knitted by Christine Raisin. STS apparently donated Richard Wildey to the raffle booty. Had I known that I might have chosen a prize after all...

Sadly Jiffy Walker, Steve OMG Williams and Paul Dwerryhouse could not attend the convention, as they had on our birthday celebration last year.

L - R: Paul Wass, Christine Raisin, Frank & Janet Smart

The convention went smoothly without you lads -mustn't pump their ego's too much- but we did miss you all.

infamous CPC User. Dave is hosting South West's get together in late October, call 01752 254404 for more details. I

marched across the room and told him off most sternly (cue Watch With Mother satire). Then gave him a hug. A lot of the day Jonty was to be found over at the Market Stall where Jacqui Owen was with her son Chris.

Peter Curgenven made it this year, bringing with him his wife Anne and also Simon Crump. Anne is a lovely lady I met at the CPC South West Convention last year and I'm sorry I didn't get a chance to say hello in Birmingham. No doubt I shall see her in Plymouth in a few weeks time. After reading issue four of BTL, Peter came to the convention with a large key. This was for the **"clock work copymod"** parodied in the disczine.

IS SIMON HERE?
He most certainly was. There was Simon Crump who has just released Super Tetris into PD. Crumpy has come up with a most excellent game when I saw it in the design stages. Also Simon Green, previously of Penguin PD and now of Stunts In His Car. And Simon Matthews who could quite often be found entertaining the masses in the smoking room. One Simon that wasn't there was Forrester. Hairy from Amstrad Action had planned to try and get to Birmingham but couldn't make it in the end. Kevin Thacker who runs a very detailed CPC website was also thinking of coming along but in the end I don't think could get a lift.

L - R: Ernie (wishlist) Ruddick, Peter Rogerson, Josie & Uncle Clive Bellaby

One ex-editor that certainly made his presence known was that of Philip "Tigger" DiRichleau. Just as Frank Neatherway and I were debating whether he was going to turn up, he walked into the room. Speak of the Devil...

...and editors. John and Carol Bowley breezed in about eleven o'clock. They hauled along two of their three boys, the helpful Chris and the something-full Richard. The Bowlsters were greeted with smiles and hugs from all corners.

Yet another editor, Brian Watson, turned up at Bescot before I was even out of bed. Brian bought with him Emmanuel Roussin, who'd flown over from France, and also picked up the tartan Peter Campbell <<Tartan? -Ed>> <<Oh to see Peter Campbell in a kilt>>. Brian said that he had arrived at the convention thinking *"this was a selling day"*. But after an outing to the market (though not because he had been with Peter Campbell since early that morning) cleared his head he then looked upon the convention as a people day. From that point he thoroughly enjoyed himself. Discussing this afterwards, Brian and I came to the conclusion that anybody who wants the software, by fair means or foul, already has it, which makes business on days such as the convention a tad slow.

Two editors that sadly couldn't make it were Dave Stitson, of CPC South West fame, and Martyn Sherwood of the

heard that Richard Fairhurst was most looking forward to seeing Martyn, perhaps better luck another time Richard.

Jonty Jones managed to make it to his second convention. Jonty originally told me he couldn't come, then managed to make it and kept it a secret. After unpacking Merline-Serve I suddenly saw what could only be Jonty, his Ghoul logo and long hair confirming my suspicion. I

Ann & Peter Curgenven

WHAT ELSE WENT ON?

There weren't any talks or presentations as were arranged last year. I imagine this is because there just isn't an awful lot that you can demonstrate in that way. How much more of Brian Watson and Protext can we endure? Also, people like to ask very specific questions. Tailoring a presentation to fit every possible use of a piece of software is virtually impossible.

But in saying that, Matthew Phillips was showing something off. Matthew maintains the WACCI web site and arrived with his wife Hillary. Matthew was displaying his almost finished new AMSPlay program, an earlier version of which can be found somewhere in the library. Apparently this version allows you to play music to a midi instrument, as opposed to through the Amstrad sound chip. Matthew did go in to a lot more detail about the program and it's capabilities, but they will be best placed in some sort of review. Suffice it to say that when I heard the music output I was most impressed. I would have expected that sort of quality from at least a Plus, it was excellent. Music/CPC fans keep an eye out for when this one is finished.

WARNING - EDITOR LOOSE

Philip was as manic and uncontrollable as usual, even a hard slap across the face didn't calm him down. I know it was a hard slap because my hand hurt. Philip was promoting Euro-WACCI, which he quite proudly edits. You can read more about Euro-WACCI at the News Desk.

At one point Philip had to ask me very nicely *(a grovelling bloke, I can handle this)* for a Euro-WACCI because he'd

Hillary & Matthew Phillips

corrupted his own. And we let this man edit our magazine. I ask you.

Philip said that he was *"a little distressed"* with the contents of Nicholas Campbell's Otto 5 that was doing the rounds. This final issue of the disczine contained some rather risque jokes written by Jonty that Philip and Rob Scott, amongst others, didn't really take to. Other than Otto, Philip commented that *"there was no nastiness as there was last year and the friendly atmosphere was very comforting"*.

Angie Hardwick

LOADSA MONEY

Convention organiser Angie Hardwick said that WACCI took in total £203.05, far more than people's expectations. This sum includes the Market Stall, on the door ticket sales and the raffle. Angie also agrees with Philip on the atmosphere being very comfortable. And BTL? *"I was gobsmacked at how nice they were."*

This has surprised a lot of people. At last year's convention the BTL crew were criticised for being insular. What people mistook for unsociable behaviour was possibly a group *(okay, Richard Fairhurst)* trying to finish an issue of BTL. They're human too and don't know the WACCI members as much as John, Philip and Angie do, so it's not as easy to just chat. From the people I have spoken to, the general reaction seems to be shock that the lads were so approachable and friendly... you should see them after a few drinks.

DMP COMMA

This year saw BTL 4.5 pinned on the notice board, even though Richard's photocopier decided to have a holiday. A two sheet intermediate BTL just for the convention. If anybody didn't see this Richard says "Tuff." But he also says that the articles will have a second airing in BTL 5 so you won't miss them.

Unfortunately due to a particularly bad week on Richard's part *(don't all smile at once)*, Fidelity never got finished for the convention release that was planned. Richard's slightly modified 664 keyboard went up the canal, he didn't have a reversi board for the Plus widget and a 464 that hasn't been used for years is not the optimum device for programming a revolutionary rom. Still, we can expect to see Fidelity, the Protext enhancement, once the 664 has been nursed back to health.

THE DIRTY DOZEN

At some point during the day the committee got together for a meeting. The committee consist of John, Frank Neatherway, Frank Frost, Doug Webb who's the Chairman and Angie Hardwick who doubles as the secretary. I'm not exactly sure how to describe the committee so John may well jump in here.<<*The committee was set-up to discuss matters that concerns WACCI. It is generally felt that five heads are better than one -John>>* Generally they all look out for WACCI and do their best to ensure smooth running of the club and

magazine. <<*You got it in a nut shell Angela -John*>> This rendezvous wasn't a "crisis meeting" so the alarmists of you need not, well, alarm. It was a good opportunity for the entire committee to be in one place, which is impossible to do over the hundreds of miles that separate them.

This is what's so great about the convention, seeing people you never see between times. There's an eight hour journey between Worthing and Northumberland, so to see Jonty is a bit of a major upheaval. Even when I go to visit Philip, Richard, Brian, John and Carol, it's a three to four hour journey and really means an overnight stay. Similarly many members just don't have the time or money that lets them travel around the country visiting people.

Back to the committee meeting. Aside from the PC page which you can read more about from Angie, at least two very good things were decided upon. BTL 4 will be in the WACCI library as with the first three issues. In this context, it's not up to the committee or any governing body to decide what we can read. The majority of us are adults *(even if we don't act it all the time)* so it's up to us how we conduct ourselves with regard to our CPC's. WACCI shouldn't and isn't here to censor anything, we as individuals have minds of our own.

There was also the matter of a holiday for the editor; This year we've already had an August/September issue of WACCI. This is nothing to do with John needing time to get an issue together, simply a

lack of articles. The people usually involved in rescuing a flagging issue of WACCI just can't do it any more, the membership will have to take up the slack. Around Christmas publishing dates get very difficult. Taking the way WACCI is produced, the production deadlines we have to stick to, holidays and seasonal post in mind, a December issue gets very difficult and stressful. This is why it has been decided there should be a "Decebuary" issue. One magazine at the beginning of December and the next in February. This gives John and his family a break for Christmas and to spend some time together <<*Oh, do we have to -The Bowleys*>>. Don't worry, you won't loose any issues off your subscription, we work these out by issue number not month.

'King' Arthur Cook

Carol Bowley

MAKE A WISH

Which is exactly what Carol did when presented with her birthday cake. Poor thing, I expect she had to take quite a few breaths to extinguish all those candles <<*You'll be here one day too you know -Carol*>> <<*I know, and that frightens me*>>.

John presented Carol with a card from WACCI members and Rob Scott gave a card from the BTL crew. People were offered slices of cake and I hear that it went very quickly.

Rob Scott also presented Angie with a card from BTL saying thank you for the convention. Poor thing was a frightened little bunny up there, and Simon Green got it all on video. There was a card and bottle of wine as a thank you from WACCI members, which Angie's daughter Helen quickly ran off with.

SMILE FOR THE CAMERA

Many people will have noticed Rob Scott, Simon Green and myself wandering around with a video camera at some point during the day. Carol and I also had some ordinary camera's so lots of photo's taken. Nearly 90 in total, most of which were excellent. At the meal some of us had afterwards Brian Watson and the waiter blinded us all with Emmanuel Roussin's nifty little camera.

We were hoping to have some stills in this issue from the video but Rob decided to fly of to the Greece Island of Kos instead - probably for the donkeys. I don't know what Rob is planning to do with the video *(other than blackmailing lots of people)* but I'll let you know. We may have some previously unpublished photo's from all three conventions in forthcoming issues. So look out those of you that pulled funny faces.

KING NICE

Yep, after the convention some of us went to the King Balti House. Actually, ten of us. As far as I can remember in seating arrangement; Brian Watson, Rob Scott, Richard Fairhurst, Emmanual Roussin, Simon Green, myself, Robin Tanner, my dad, Richard Wildey and Simon Matthews. We got through 105 pounds worth of curry. Apparently some people took a couple of days to recover, but less of that, more of this.

GRUB'S UP

Dad and I opted to have the carvery this year, having missed breakfast because we got up late *(story of our lives - we set the*
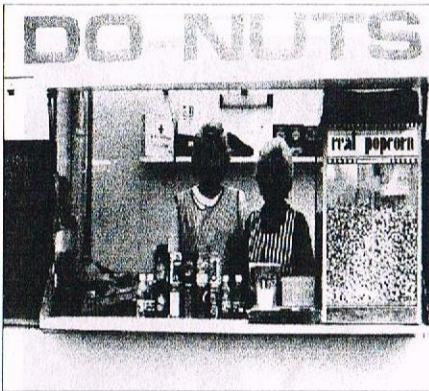
The lovely do-nut ladies

alarm and next thing we know STS are knocking on the door telling us it's time to leave). A lovely meal, the gravy being exquisite. I remember Bob Houston, Ray Powell and his wife to my left. To my right was Frank and Janet Smart I think. I don't remember recognising anyone else, except of course James Coupe.

Lovely James. No, really. He told me I shouldn't have been ordering a lemonade and lime with my meal. *"You're writing's too laddish for you to be ordering a lemonade."* He said in his oddly listenable to accent. He then proceeded to order a lemonade himself.

Other people bought food with them, or went down in to the market. Apparently the chips and curry they did was very nice. Angie also bought the BTL lads some doughnuts from the market. I think that was the highlight of their day.

DEEPLY WONDERFUL

John told me that the second Mr X, our underwriter for this year, attended the convention and was suitably impressed. But because of the good turn out, the good raffle and the Market Stall doing so well, his services *(and cheque book)* were not needed. Still, we all appreciate the offer without which the convention never would have gone ahead. Seeing as you saved all this money, Mr X, how about a round of drinks for everyone?

A YEAR AND COUNTING

And what will become of next year? Angie stated in The Market Stall that she thought this would be the last one she organised, so disappointed she was in the original response. Far more people turned up on the day than were expected. Angie's opinion may well have changed.

Whilst Bescot stadium is a nice location, it's getting awkward now. For a start there are those steps. Horrendous for the less able bodied amongst us and

unloading a van or car. The stadium is also very expensive. Four hundred odd quid is really very OTT for what we need. If we don't use Bescot Stadium, another location must be chosen. It must be cheap, on ground level, with a car park. Train and bus services must also run close. Also on the preference list is a bar and food nearby. I know Angie is looking in to this, so perhaps we'll have a large church hall next year.

The last three conventions have largely all been the same in the respect of location and time of year. Perhaps it's time to change the format. One idea is to have two conventions. One in the south and one in the north. Is that a good idea? Two lots of rooms to pay out for with potentially half the amount of people attending each one. What other suggestions do people have that we can all argue about in Fair Comment? <<*Oh goody -Philip*>> The bottom line is, if you want a convention next year, tell us and then buy a ticket.

THANX AND STUFF

Well of course top of the list is Angie. What can you say other than a really huuuuuuge and wet sloppy *"Thanks"*? To John *(and Carol)* for the work they do on the magazine, without which there

barmaids for plying us with drinks. Thanks to the odd bloke at the stadium door that I swear had the same plaster around his glasses as last year. And to everyone else for just turning up.

Angela

More convention chatter from:
Angie Hardwick, James Coupe,
Carol Bowley and Christine Raisin

Angie Hardwick Has Left The Building
What was the best thing about the Convention this year? Well for me at least, the relaxed atmosphere and face to face contact between members and their wives. What was the worst thing? Yes, you've guessed it, those damn stairs. I don't know about you, perhaps it's because we've done it twice before, but it wasn't as bad as the anticipation. I suppose it's like everything else in life, anticipation of an event can be better or worse than you expect - depending on your point of view.

I must admit that I was a bit apprehensive about coming face to face with BTL this year. After all they have said and written about WACCI I was very surprised to find them such a nice bunch
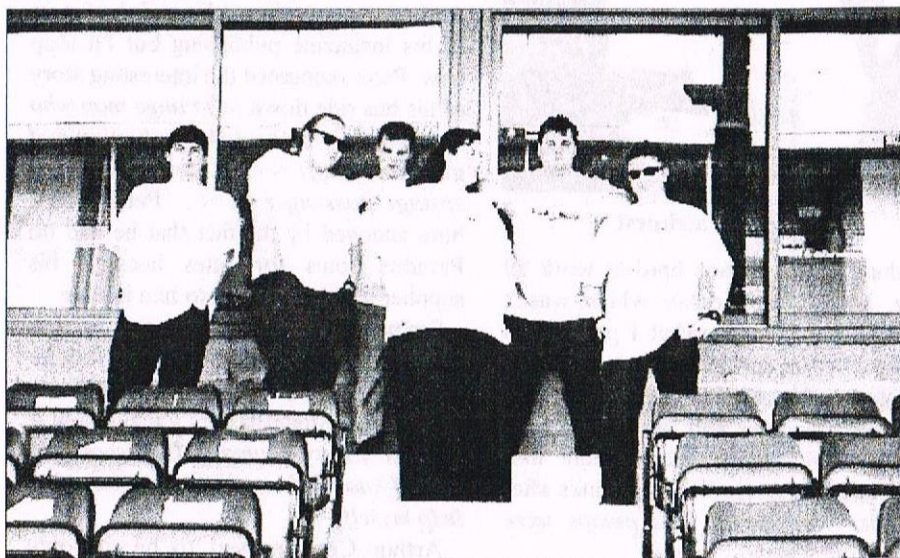
L - R: Richard Wildey, Simon Green, Richard Fairhurst, Angela Cook, Rob Scott & Simon Matthews

obviously wouldn't have been a convention. Doug Webb was stuck in the WACCI office most of the morning copying PD, so thanks to him also. To Jacqui Owen for running the Market Stall once again. To Angie, James and Carol for writing some other bits for this report - James' was originally on csa8, the internet newsgroup. Thanks to all the

of young men and so helpful. Just goes to show never to prejudge anything or anyone. On the other hand it might have been *"Be Nice To The Wrinkleys Week"*.

It was great to be able to surprise Carol Bowley with a birthday cake. She walked past it several times before it even dawned that it was for her. On this note if any of you have an anniversary or special

occasion near the date of the next convention *(what am I saying?)* then I would be delighted to arrange something similar for you. Just give me the details and I'll do my best.

Thank you all for coming, the hard work arranging such an event is more than paid for when I see you all enjoying yourselves.

Angie

James Coupe's Convention

Wow - just got back and it was pretty good. Fewer people there, of course, but you didn't really notice it. It seemed that a lot of people just drifted in and out rather than coming at 10 or whatever, which meant that there was always someone you hadn't spoken to.

Angela Cook had the rather disturbing habit of hiding in the carpet and suddenly bobbing up out of it when I went past and saying *"Whoosh!"*.
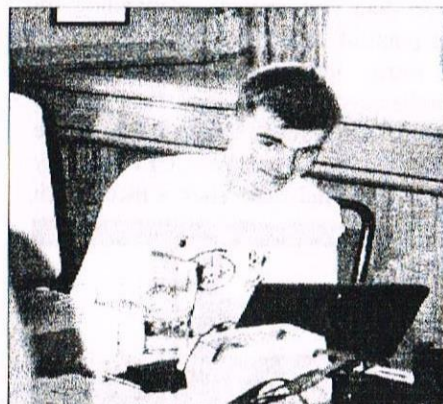

Richard Fairhurst

Richard Fairhurst was hard at work all day, honest, on Fidelity which wasn't ready because, from what I gather, his 664 packed up during the week *(his main machine)*, his 6128+ didn't have the necessary dongles and widgets for use and his 464 was the only machine left. And he still managed to get drinks after the bar was closed *(the pumps were turned off, honest)*.

Rob Scott did lots of things with his camcorder and had lots of conversations with Angela which are probably actually illegal in this country. He is also far too honest for his own good about the things he was doing with his PC *(I'll say no more)*.

John Bowley turned up late which scared Angie because she thought she was going to have to pay for the Convention. John was bribed by the kitchen staff not to go anywhere near the
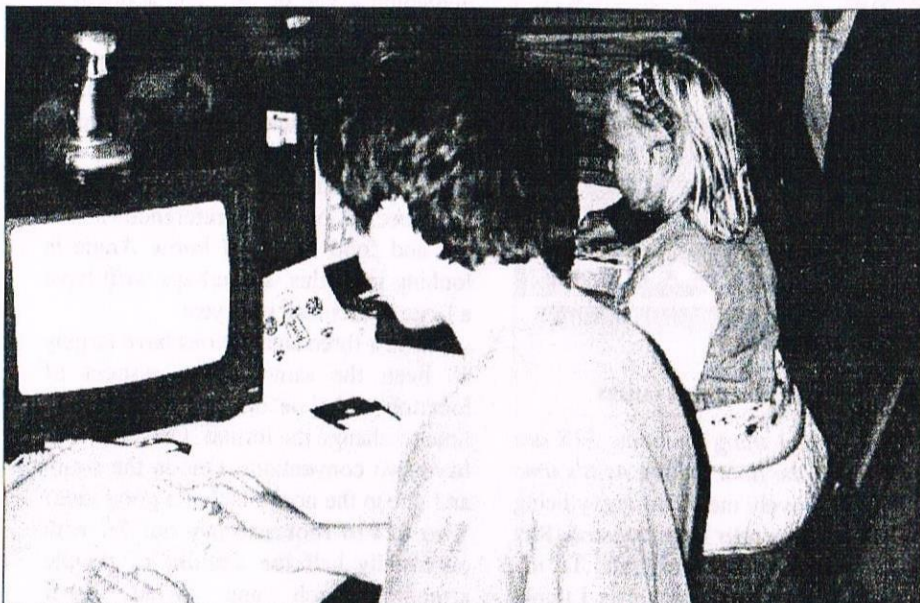
Francis Wolfe & Clare Staley fight for the silver joystick

restaurant because they'd only budgeted a certain amount of food for the carvery.

Dave Simpson tried to sell copious amounts of CPCs and monitors but couldn't - but then no-one could. He donated a 6128 with monitor as a raffle prize, as did Angela and Arthur *(just a monitor)*.

Brian Watson and Peter Campbell were there, Brian had some very interesting stuff to say regarding 8-bit and the future of his magazine publishing but I'll stop now. Peter recounted the interesting story of his bus ride down *(a strange man who kept telling him about his meditation and guru and stuff)* <<*Not Peter, the other strange passenger -A*>>. Peter was a little annoyed by the fact that he had no Parados roms for sales because his supplier hadn't got them to him in time.

Emmanuel Roussin managed to get here *(surprising, that, considering he came with Brian)* and seemed to spend all day playing MegaBlasters - that's how it seemed. *(Sorry, Emmanuel, if I spoke too fast - I know I do it all the time but can't help myself)*.

Arthur Cook proved to be the only person on earth to tame BTL - the previous night they had all stayed at a Travelodge and someone in BTL is quoted as saying *(when Arthur left the room)* words to the effect of *"Oh good, Arthur's gone. We can be rude about Angela now."*

The *"Oh Mummy"* tournament was won by Francis Wolfe but he couldn't be found at the end.

Philip DiRichleau was promoting Euro-WACCI which is really rather good *(and*

I'm not just saying that because Philip put two articles in there from me which I thought (hoped) had been lost because they'd been given to Paul ages ago - about 6 months before he stopped editing the magazine, I believe (it was in an August, I think, but which August?)). He was also freshly goatee-d which does suit him but takes a little getting used to.

Lots of other people were there - Jacqui Owen's and Angie's children, Christine Raisin, Ian Parker, Ernie Ruddick, all of BTL and Systeme D, Ray Powell, Ian Izett *(I think - the one with streaky grey hair who looks incredibly like Bob out of Twin Peaks)*, Bob Houston, Doug Webb and a fair few other people who aren't known members of Wacci - meaning I can't remember their names. *James*

Philip (tigger) DiRichleau

Dawn Staley

Carol Bowley Has A Word (or more) To Say

Sunday September 14th 1997, 0600 hrs. *"John, John, it's time to get up!"* A stifled groan is emitted from under the cover. A very reluctant head is thrust out from under the bed-covers and promptly shoved back. My husband is doing his tortoise act again.

Well here we are at the start of a very exciting day for the world of the CPCer. The WACCI convention has reached it's third year and not one has been a disappointment. In fact they have all been a thoroughly enjoyable day all round.

This year us Bowleys got off to a slow start and didn't arrive until late. Although there were bets being taken as to whether we would arrive or not it was soon a case of better late than never. Unfortunately for us arriving late meant a lack of parking choices. After walking around the stadium from our spot we found the doughnut stall placed very conveniently in front of the doors, and yes I did take the constitutional photograph.

I was snapping away as usual and again this year I managed to get some very nice photos. I had a great time wandering around with my camera, meeting friends old and new. I am still amazed by that wonderful feeling of friendship that everyone has. It feels like we are all part of a large close knit family. I know that probably sounds extremely corny but it is how I feel about it.

So what happened at the convention I hear you ask? I saw Rob Scott with his 'in yer face' attitude carrying his video camera, trying to get the best shots of the day to blackmail folks with. King Arthur and Wizardess Angela Cook were kept very busy for most of the day with the Merline-Serve stall. Peter Campbell was at his stall with Brian Watson. There was a computer challenge game set up with the winner gaining a silver joystick.

This was a very good idea as it gave an extra bit of entertainment, especially to the youngsters, and was available to everyone. Jacqui Owen was again running the WACCI stall and did very well too. Jonty Jones provided Jacqui with some good company. James Coupe had the stall next to WACCI but I haven't a clue what he was doing *<< I don't think he did either most of the time -A >>*. Dave Simpson had the next stall selling full set ups and spares. He had a good

Doug Webb

line in cordless headphones and they were really good but I couldn't afford a set. Last but most certainly not least came the BTL crew. Richard Fairhurst, as you may have already read, wanted to release his new programme Fidelity at the convention but was not able to due to a technical fault. We held the raffle again and this year we had Uncle Clive to draw the tickets. We had some great prizes; Xexor from Peter Campbell, an Emulator from Angie, a binder and game from the WACCI stall, 3 Rodland games and a monitor from Merline-Serve, a computer from David Simpson and once again a fabulous framed, knitted poster from Christine Raisin. Thank you to you all for your generous donations

In the next room there were people sitting, chatting and generally having a good time. it was nice to see a few more young people present this year. we brought two of our wonderful offspring, Christopher & Richard, Dawn Staley had daughter Clare, Ian Neill brought daughter Shannon, Angie had daughters Helen and Kelly and Jacqui had Chris and her daughter.

A funny incident happened during the raffle that I must share with you. I came across the ever smiling Frank Smart *(vindaloo kid)* and took the opportunity to jokingly tell him that although his was the only competition entry I had received at that time, there was no way he was going to win again. When I was asked by uncle Clive to pick a raffle ticket winner, whos number did I call - yes youv'e guessed it, Frank blooming Smarts. boy was I gobsmakked!!

I also had the pleasure of meeting Margaret Schofield and her son Andrew.


L - R: Rob Scott & Brian Watson

Ian Neill & Shannon

they are such lovely people and I chatted with them for ages. I discovered that Margaret has a trained eye for paperwork, so if you are cringing as you see the mistooks in this report Margaret - SORRY!

There was a table set up with a cake and balloons on but I didn't take much notice at first because I thought it was another editor's cake like we had last year. I thought I would take some photos of it a bit later. Imagine my surprise when I was told that the cake was for my 40th Birthday which I would be celebrating on the 25th. Talk about dozy!

Angie very kindly made the cake at John's request. After a rounding chorus of Happy Birthday most people had a slice of cake <<*I didn't get any -King Arthur*>>. <*neither did Frank Neatherway ha ha!! - Carol*>
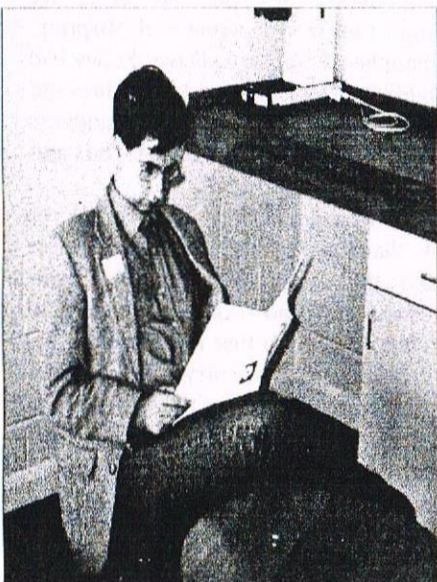
Emmanuel Roussin

It must have been one of the few moments in my life when I was fairly quiet. It is all on Rob's video so I shall have to have a look as soon as I can.

Amoung the many people who sadly couldn't make it to the convention, my heart goes out to poor Dennis Reed who had the misfortune of breaking down twice on his way to see us *(his car that is)*.

WACCI gave Angie a thank you card with a bottle of wine and a small box of choccies. Angie deserves a big thanks from everyone for her devotion to duty and once again pulling off a great convention. All in all it was a magical day. Everyone that I spoke to enjoyed themselves and said how much they looked forward to coming. Christine and Christopher Raisin brought two of our
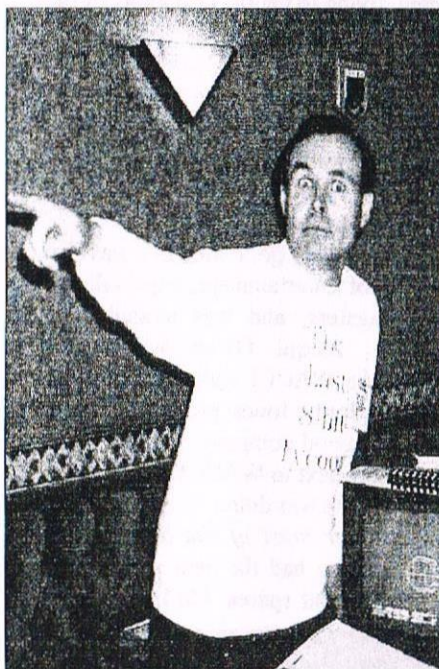
Brian Watson

newest members with them; Paul and Michelle Wass. Also Emmanuel Roussin came all the way from Versailles.

And so to home we made our way, weary and everso slightly hungry. After enjoying a humble hamburger we set off - and promptly got lost in Leicester.

After driving around for 45 minutes we found a way out and went for it - only to go 30 miles in the wrong direction but never mind. We finally arrived home at around 11.30pm and after unloading the car and a soothing cuppa, went to bed. WACCI Convention '97 over, roll on next year's.

Carol
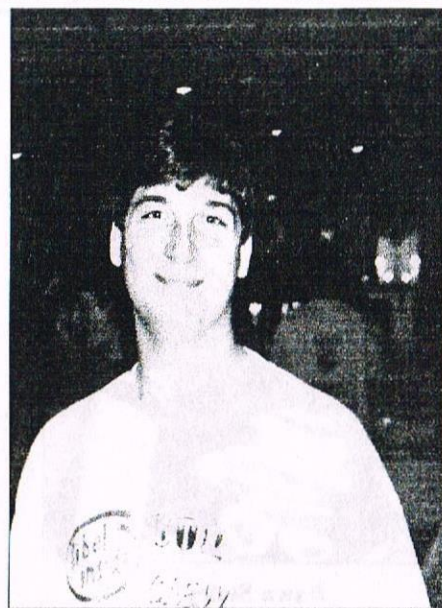
Richard Wildey

A MESSAGE FROM YOUR EDITOR
I would like to thank all those who made the convention a big success. A lot of hard work was put in to make this convention very special, so give yourselves a big pat on the back as you all deserve it.

The photographs that you've been looking at and hopefully enjoying were taken by Carol Bowley. They were then scanned into Angela Cooks PC and laid out by me. I decided that instead of the cut and paste method, I would attempt to convert the images to use from within Microsoft Publisher. I hope they reproduce well but if not then I apologise. However if they do come out well then I will give myself a big pat on the back!

John

Kelly Hardwick at the end of a tiring day

WACCI CONVENTION 1997
By Christine Raisin

Our day started at 5.30am. On waking up we knew it was going to be busy. Tea mashed and breakfast for me. Chris washed shaved and ready to leave the house by 6.15am. His first port of call was the garage for petrol, oil and tyres checked, and a car wash. He then headed to Mansfield to pick up Paul and Michelle Wass as arranged in the car park of The John Cockle. He got a short rest there as he was early. While Chris fetched them, I got ready so when they got back here, Chris would get a short rest before getting me into the car and on our way. They got back here at 7.45am, we all had tea and a chat.

It was then time to get this show on the road. We all went down to the car at about 8am. Luckily we live near the M1 so just a short trip up the road to the motorway, then the M42, to the M6, then to the Walsall Stadium. We arrived at 9.30am there was no parking space at the back near bay 8, so Chris pulled in behind the van that was unloading. Chris was soon told he could not park there. We knew that but he had to unload me as near as possible. Paul and Michelle got out with me to help me in.

I was glad of the trolley I held on to into the stadium *(Thanks lads for the lift ha ha)*. I was met at the bottom of the steps by Chris Owen, asking if I needed help, sure do. No sooner said than Brian Watson Peter Campbell and Angie Hardwick where coming down to help. Believe me their help was appreciated. I seem to think there could have been others there at that time, so if you were please accept my thanks. It is a struggle up those steps for me but believe it is worth it. Angie promises me if the convention is there next year there will be a lift.

I was soon meeting old friends and making new ones. I entered the bar room meeting each and every one on the way. I had made the CPC WACCI 97 for the raffle, so headed into the large room where all where busy setting things up. On the left Angela and Arthur Cook had the first tables. Brian Watson and Peter Campbell the next few tables. The tables at the end of the room where Oh dear I can't remember the chaps name on the first tables there, then came Market Stall with Jacqui Owen who for the third year running sat all day working away. Here anyone with something to sell could put their wares for sale. Thanks Jacqui for all

you did, and good job well done. All along the right side was Dave Simpson.

Then last but not least was BTL along to the door and the notice board. This room was very busy all day. The sales and bartering, hunting for what you where looking for. I'm sure anyone that was there found a bargain they where looking for or found there. Lets face it there are not many places now, where you would see so much CPC Amstrad goods for sale.

In the WACCI room was Doug Webb with the PD Library he was very busy doing people's PD disc's. Thanks Doug for all the time and work you put in. I know Doug had to take some of your orders for PD but lets face it that was the original idea, that we filled in our PD form and left it to be done. I know Doug did a lot on the day as he did a lot for me. Thanks Doug for the others, they arrived through the post within the week. That *was* service, as he had a lot to do.

The smoke room I believe was very busy most of the day. Here folk gathered for a good chat as well as a smoke. Ok it is one room I don't use as I don't smoke, but those that do met friends.

There was concern for our editor and family when they had not arrived by 11.30. When they did arrive John was not feeling well, it just shows the spirit that our club has. When an officer puts the club first. Our committee got together to have their meeting. Again they put the club first. We must remember they come to enjoy themselves too.
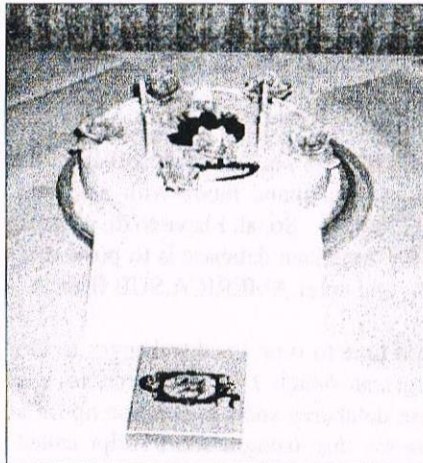
The surprise of the day was a birthday cake for Carol Bowley who was 40 years old on the 25th. I hope you had a good day Carol, sorry I forgot to send your card. There was a thank you card signed and given to Angie for organising it for us again, I hope you also enjoyed your bottle of wine.

Helen was given a bunch of flowers for doing the raffle.

This all went to making a really great day for those that made long journey's to the stadium. I have been to all the three conventions and this one was the smallest attended. In saying that, I have to say that it was much easier to move around.

It made it easier also not to miss someone you wish to meet have a chat with and get help that was needed. I met too many people there to mention them all by name, but to each and every one of them it was a pleasure that I would not have missed. I have to say a very great thank you to everyone that gave me help through the day. For those of you that were not there, I am wheelchair bound and I have not been well for the last six months.

I could not have coped that day if people had not given me a hand. Mind you what a way to make friends, to say **"give me your hand to help me along"** Well that's what I'm saying. I also had the pleasure of meeting the BTL crew and getting to know each of them. They are a great bunch of guys and gal.

We left at around 5pm and that was where for me, it become hard again. There was help at hand, Paul and Michelle Wass where there for me most of the day. Carol Bowley was helping me with others down all those steps when She said" **Where's the camcorder.**"*(No it was not on)* You see I have to go down the stairs on my knee's and Carol said " **See how you leave WACCI**" Well Carol I was tired HA HA. Believe me it was worth all the effort. We also had another passenger in the car coming home. We were giving a lift home to Peter Rogerson.

We got to Nottingham at about 6.30pm we all came in for a mug of tea. This was also to give Chris a break again, before he drove them back to Mansfield, Chris arrived back here at 8.30pm.

He was very tired. It was not long before we were in bed. Although the day was long, and it was for many that day.

We really did enjoy every minute of the day and it was worth it. I for one hope that there will be another next year. I wish to say thank you to all that helped me and made the day so memorable.

Christine Raisin

Submit
by John Hudson

BORING JOBS AND PARAMETERS, CP/M SCRIPT really comes into its own with repeated commands such as those used in jobs like debugging or backing up.

If you are developing a program in assembler or C, you normally enter the source code, compile the program and run HEXCOM before testing the program. So creating a program in assembler might involve:

WP NEWPROG ;
to write the source code
MAC NEWPROG ;
assemble the source code
HEXCOM NEWPROG ;
convert from Intel Hex to Binary
NEWPROG ;
run the program

or, in CP/M 2.2

WP NEWPROG ;
to write the source code
ASM NEWPROG ;
assemble the source code
LOAD NEWPROG ;
convert from Intel Hex to Binary
NEWPROG ;
run the program

It would be rather tedious writing a new script with the name of the program in every line; so CP/M allows you to add parameters. You can create a file perhaps called CREATE.SUB:

```
WP $1
ASM $1
LOAD $1
$1
```

and, whenever you need it, you simply add the name of the file you are creating, for example, CREATE NEWPROG *(or SUBMIT CREATE NEWPROG if you have not used SETDEF).*

CP/M will then replace every $1 with NEWPROG. You have to say $1 because you can add several parameters. For example, if you find PIP confusing, you can create a script call COPY.SUB

with the line PIP $2=$1[v]

Then, if you have used SETDEF as described earlier in this series, when you enter COPY A:MYFILE B:MYFILE

CP/M will copy A:MYFILE to B:MYFILE

If you are using CP/M 2.2 or you haven't used SETDEF, you have to say SUBMIT COPY ... or COPY.SUB ...

BACKING UP

If you have used PIP in multiple command mode, you will know that it will put up an asterisk and allow you to enter a sequence of commands.

If you want to use PIP in a .SUB file, you can put the same commands in prefaced by '<'.

So, for example, I happen to have some databases which are split between Europe, America and the rest of the world. The file AMERICA.SUB contains the lines

```
PIP
<a:=b:america.dbf[ov]
<a:=b:america.ndx[ov]
<
```

The last '<' is needed because PIP exits multiple command mode with a simple <RETURN>. So, all I have to do to back up my American database is to put a disc in A: and enter AMERICA.SUB from B:

From time to time I make changes to the programs which I have written to use these databases and I back these up on a separate disc using a short script called BAKDBASE.SUB:

```
PIP
<a:=b:*.cmd[av]
<a:=b:*.fmt[av]
<a:=B:*.frm[av]
<
```

In this case, I am only interested in the files which I have changed; so I add the [a] or 'archive' option.

The '<' works for both CP/M Plus and CP/M 2.2 users, the difference being that you have to leave out the [a] or 'archive' option, add the line XSUB at the start of the .SUB file in CP/M 2.2 and have XSUB.COM on the disc along with SUMBIT.COM and PIP.COM. Also, without the 'archive' option, you have to copy all the files; whether that would take longer than entering each file name separately would depend on how many program files you had written or changed.

TOTAL CONTROL

This ability to accept commands for execution within a program can be extended to any standard set of instructions. To take another example, if you want to use dates or passwords with CP/M Plus, you have to use INITDIR after DISCKIT3 in order to prepare the discs for dates and passwords. Digital Research made this a separate process so that people could carry on using discs without dates and passwords with CP/M 2.2.

But INITDIR.COM always asks you whether you want to proceed and does not offer you the normal response at the end of a formating program 'Format another (Y/N)?' As I usually format discs in batches of ten, I wrote a short .SUB file to simplify the process:

```
INITDIR.COM B:
<Y
SET B:[ACCESS=ON,UPDATE=ON
```

; Put another disc in drive b: and press a key to continue or; press CTRL-C to end PAUSE
;
;
;
INITDIR
As before, if you are using SETDEF [order=(SUB,COM)], you have to add ".COM" to INITDIR in the first line;

otherwise you end up in a loop. If you are not, you can leave ".COM" out but you need to change the last line to INITDIR.SUB.

When INITDIR asks you whether you want to proceed, CP/M sends 'Y' to the program as if it had been keyboard input.

SET initialises the two forms of the date I want to use and PAUSE.COM gives me time to put another disc in before the whole sequence starts all over again.

I put a few comment lines in after PAUSE because CTRL-C does not operate instantly; PAUSE.COM intercepts the first CTRL-C; so you have to hold it down until PAUSE.COM has returned control to the special temporary file which then halts in response to CTRL-C.

If you don't have PAUSE.COM or WAIT.COM or the GRADUATE CP/M ROMs, you can create a pause with ERA B:*.* because this will always put up the prompt 'ERASE B:*.* (Y/N)?' which will not cause any problems since you are dealing with blank discs. You can then change the disc and answer 'N'.

Alternatively, you can get hold of the public domain IF commands which include options to pause and quit.

Instead of using '<' in CP/M Plus, you can use GET.COM and put GET MYFILE before INITDIR where MYFILE contains a list of instructions you want the program to act on.

In this case, there isn't any point as there is only one instruction but, if you have a long series of instructions, it may be better to put them in a separate file and edit that when you want to change them rather than editing the .SUB file every time.

RECAP AND SOME MORE

To round off this series, I will recap the main features of CP/M SCRIPT and look at IF.COM and a point about user areas.

You can automate a range of repetitive or complicated tasks in CP/M using features which were built into CP/M from Version 2.

A few programs make direct use of these features but Digital Research also provided a program called SUBMIT.COM which enables you to convert a sequence of instructions into a temporary file which CP/M will execute.

To do this, you put your instructions in a file, perhaps called COPY.SUB, and enter SUBMIT COPY or COPY.SUB or

COPY if you have used SETDEF in CP/M Plus.

If you want to use the same instructions with different data or program files, you can use $1, $2, etc. to stand for each parameter in the sequence of instructions in COPY.SUB and give their names each time you run the program, for example, SUBMIT COPY OLDFILE NEWFILE.

If you want CP/M to pass instructions to a program, you preface these with '<' (and run XSUB.COM in CP/M 2.2). Alternatively, in CP/M Plus, you can use GET.COM to pass a series of instructions to a program.

CP/M Plus comes with an additional feature; when it is loaded, it always tries to find and run PROFILE.SUB; you can use this feature to fully automate the way CP/M Plus runs. Locomotive Software added a range of Amstrad specific programs to make this easier for 6128 users.

In addition, there are a number of PD programs which extend CP/M SCRIPT, such as PAUSE.COM, CLS.COM, SKIPIF.COM, QUITIF.COM and IF.COM of which the last three deserve special mention.

IF

IF.COM takes advantage of another feature of CP/M which few people have exploited - error codes. If you put : at the start of a line in a CP/M script it will only execute it if there is no error code. So you could have a script called LETTER.SUB:

IF / $1 ; if $1 does not exist :PIP $1=TEMPLATE.LET[v] ; create $1 WP $1 ; load wordprocessor and edit $1

When you add the name of a file after LETTER.SUB, CP/M Plus will look for the file and, if it does not find it, create it from your letter template before loading your wordprocessor. Otherwise it will load the wordprocessor immediately.

The same script would work slightly differently in CP/M 2.2 where the PD programs SKIPIF and QUITIF do not rely on error codes but simply skip a line if something is true.

SKIPIF E $1 ; skip the next line if $1 exists PIP $1=TEMPLATE.LET[v] ; create $1 WP $1 ; load wordprocessor and edit $1

Both the enhancements of SUBMIT.COM for CP/M 2.2 and IF.COM for CP/M Plus extend the capabilities to CP/M SCRIPT significantly. Version 3.4 of IF.COM allows a wide range of conditionals including a simple pause condition (so you can dispense with PAUSE.COM) and can be patched onto SUBMIT.COM so that it is there every time you use SUBMIT.COM.

In this case, you begin the relevant lines in your .SUB file with '?' rather than 'IF'. So you have to decide whether you are going to patch SUBMIT.COM or not and write all your .SUB files to suit whether you are using IF.COM as a standalone program or through a patched version of SUBMIT.COM.

USER AREAS

A CP/M script, like a program, can use one user area and the system area. But there is one quirk in the way CP/M handles files in the system area which can create problems with free-standing CP/M spellcheckers. When using these, you usually need to exit the wordprocessor, use the spellchecker and then return to the wordprocessor to reformat the text.

If you make all the spellchecker's files, including the custom dictionary, [sys] files in area 0, you can run the program from any user area but, when it has finished, the spellchecker will write the new custom dictionary to the current user area and not to user 0 and it will lose its [sys] attribute. So you can end up with a different version of the custom dictionary in every user area (and the disc rapidly fills up!). To get round this problem, I wrote the following script:

SPELL $1
SET CUSTOM.DCT[sys]
PIP
CUSTOM.DCT[g0]=CUSTOM.DCT[rv]
ERA CUSTOM.DCT

which I only use outside user 0. This spellchecks the document, makes the new custom dictionary a [sys] file in the current user area and then copies it back to user 0 over the original. The 'r' in [rv] is essential as PIP will only copy [sys] files if you add the 'r'. Finally, it erases the custom dictionary from the current user area. Obviously, this script must not be used in user 0 as you will get an error message in line 3 and a disaster in line 4! So I keep a separate script for spellchecking documents in user 0.

The Puzzle Page
with Carol Bowley

Hi all and welcome to another mind train stopping puzzle, this month I've done, er! A crossword. A fairly simple at that, but all the same I hope you will all enjoy doing. I've listed the clues and its up to you where they go in the matrix, so maybe its not that easy after all. Ain't I rotten. Have fun.
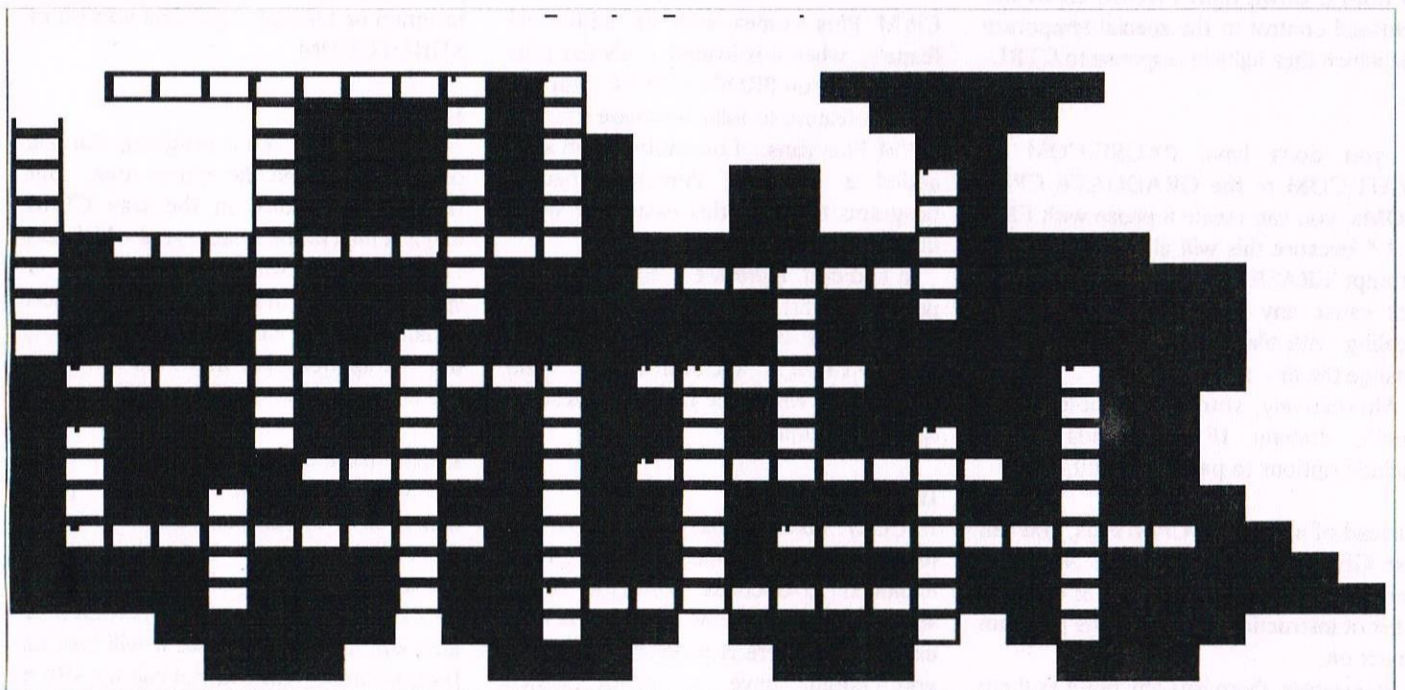
Down

At the start
Spectacular pageant
The answer
Follows ten
PC squeaker
Walsalls CPC capital
Word puzzle
Delicate
Energize
Church going
Birthday food
Birthday flame throwers
Lord of Olympus

Across

Rowdy
The meeting of enthusiasts
WACCIs collective
Display
Monthly CPC enjoyment
3 or 3.5
Once a year ager
Housing enlargement
The computers memory box
Bells communicator

Please send me your answers by the end of November.

Bye for now..   *Carol*

Programmers' Patch
by Matthew and Stephen Phillips

Last month we started looking at a short routine for handling menus in BASIC, and produced a simple selection menu with a scrolling bar. This month we are going to have a go at some more complicated examples.

The routines are reprinted this month in lines 1000-1017 of Listing 1, but you may want to have last month's article handy to refer to the list of variables used in the program.

In the simple selection menu, we just needed to set up where the menu was, and how big it was, and that was about it. The routines are capable of a lot of different applications, controlled mainly by the mf (menu flags) and kf (key flags) variables, along with kp (keys pressed), which returns information to us after the user has selected a menu item.

FLAGGING DOWN

The kf variable is for controlling how the routines respond to the keys. The numbers of the keys detected by the routines are held in several variables: "up" and "dow" tell the routines which keys to use for moving the menu bar up and down, while "le", Š"ri", and "fi" are just three other keys that can be detected by the routine. They do not have to act as left, right, and fire in any particular way; they are just called that to make them easier to remember.

Variable kf is a bit-significant number showing whether the routine should respond to the "le", "ri" and "fi" keys. Just add up the following values for each of the keys:

le	1
ri	2
fi	4

Thus 3 would mean that only the "le" and "ri" keys should be used.

In our example last month, we set kf to be 4, so that only the "fi" key *(which we had set to be COPY)* was detected. If we had wanted to, we could have set "le" to be 18 and "ri" to be 6 *(the RETURN and ENTER keys)*. Then with kf set to 7, so

that all three keys were detected, the user could have used the cursor keys to move the menu bar up and down, and selected the menu item with any of the COPY, ENTER and RETURN keys.

ANOTHER MENU, ANOTHER VARIABLE

In Listing 1 we have another example program, which shows another way of using the menu routines, and also helps you to calculate the value of kf that you need. This time fi is 18 for the RETURN key, le is set to 47 for the space bar, and we do not need "ri", so it has been left as it is.

The program brings in a variable we have not yet met. The keys pressed are indicated by kp, and it works in the same way as kf above. When we return from line 1000, if just the "fi" key is pressed, then kp will be 4. If only the "le" key was pressed then kp would be 1. Of course, the user might have pressed both at once, in which case kp would be 5.

In Listing 1 we have ignored the cases where several keys might be pressed at once. The WHILE-WEND loop of lines 110 to 140 goes round and round until kp=4, which happens when the RETURN key is pressed on its own. In line 130, the commands to toggle the values between On and Off only happen when kp=1, when only space is pressed.

Although we could tell when both of those keys are pressed at the same time, the user is not really giving a clear indication of what should be done, so it is more sensible just to ignore it. It also makes the BASIC program much simpler for a change!

Just for the record, we ought to point out that even if you set kf to 5 to show that you are not interested in the "ri" key, if the user presses the "le" and "ri" keys

together then kp will be returned as 3, not 1. There are cases where this might be a nuisance, so if you want to avoid it, you can just say

$$kp=kp \text{ AND } kf$$

straight after the return from line 1000, and then kp will only tell you about the state of the keys indicated in kf.

BACK TO THE ISSUE

Our second example this month shows what you might want the "le" and "ri" keys for. You will need to type in lines 1000 to 1017 again to go with Listing 2.

The user is presented with an order form for back issues of our favourite magazine. The left and right cursor keys adjust the quantity of each magazine to be ordered. Certain issues are out of stock, and so the menu bar will roll straight over these options to the next one. You may have seen similar features on the menus of the Advanced Music System.

Line 150 adjusts the number of magazines according to whether the "le" or "ri" keys are pressed. This is a much simpler version of the techniques we explained in the March article.

How do we tell the menu routine to roll over the magazine issues which are out of stock? This is where the mysterious variable mf comes in. It is another of these bit-significant variables. In line 10 mf is set to 8+32, or 101000 in binary. Each binary digit, or bit, corresponds to a menu item, and a 1 tells the menu routine that the item is unselectable and should be rolled over. The least significant bit *(at the right hand end)* refers to the first item on the menu. If you want to use this feature your menu is limited to 16 items.

You can calculate mf in various ways, and it really depends on whether you will need to alter it much. If mf is going to stay the same, the easiest way is to set it in binary:
$$mf=\&x101000$$

Otherwise you will probably have to mess around with powers of 2 to achieve the right value.

LOOKING SHIFTY

The program as it stands only allows you to alter the quantities by one at a time. It would be nice to be able to hold the SHIFT key down and press left or right to alter the value by ten. To do this we will have to modify the menu subroutine, as we don't have a spare key.

Just add onto the end of line 1006:

$$-8*(INKEY(sh)>-1)$$

and add "sh=21" to line 30. This tests another key, "sh", which has been set up to be the SHIFT key. Eight will be added to kp if SHIFT is pressed.

We do not need to alter kf because we do not want control to return from line 1000 if the SHIFT key is pressed on its own. Whether the SHIFT key was pressed is still indicated in kp, even though we set kf to☐ show that we were Šnot interested in it. Finally we need to alter line 150, where the quantity of magazines is adjusted:

```
150 num(mp)=num(mp)+(((kp AND
1)=1)-((kp AND 2)=2))*(1-9*((kp
AND 8)=8)):GOSUB 210
```

This time we do need to cope with more than one key being pressed at once, so the line is a lot more complicated than before. To find out from kp whether a particular key is pressed we AND kp with the appropriate value. Thus if the "sh" key is pressed, kp AND 8 will be 8: otherwise it is zero.

Again we are using the results of logical expressions in our calculations. The important point is that a true statement has value -1 and a false statement gives 0. The first part of the expression gives -1, 0 or 1 depending on the left and right keys. We then multiply by 10 if SHIFT is pressed, or by 1 if it isn't.

You could get the same effect with a lot of IF statements in a much simpler, but longer, way.

WHAT ABOUT THE SUBROUTINES?

Yes, we'll get onto them next month. Be patient! In the meantime, why not alter Listing 2 so that you cannot order negative quantities of magazines...

Listing 1:

```
10 MODE 1:mch=3:mf=0:mde=0
20 mcol=2:msp=16:mx=0:my=399-5*16:mbh=16:mbl=16*2-2
30 up=0:dow=2:le=47:ri=1:fi=18:kf=5
40 ourkf=0
50 PRINT"Press SPACE to toggle the values On/Off"
60 PRINT CHR$(34)"Off"CHR$(34)" means the key would be ignored"
70 PRINT:PRINT"Press RETURN to calculate the kf value"
80 LOCATE 1,6:PRINT"le":PRINT"ri":PRINT"fi"
90 FOR mp=0 TO mch-1:GOSUB 160:NEXT:mp=0
100 GOSUB 1010
110 WHILE kp<>4
120 GOSUB 1000
130 IF kp=1 THEN ourkf=ourkf XOR 2^mp:GOSUB 160:FOR delay=1 TO
100:NEXT
140 WEND
150 GOSUB 1010:LOCATE 1,10:PRINT"The kf value you need is"ourkf:END
160 LOCATE 10,mp+6:IF ourkf AND 2^mp THEN PRINT"On " ELSE
PRINT"Off"
170 RETURN
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
```

Listing 2:

```
10 mch=6:mf=8+32:mde=0
20 mcol=1:msp=32:mx=124:my=322:mbh=22:mbl=132
30 up=0:dow=2:le=8:ri=1:fi=47:kf=7
40 DIM num(mch-1)
50 MODE 1:LOCATE 8,3:PRINT"WACCI back-issues orders"
60 LOCATE 8,4:PRINT STRING$(24,"-"):LOCATE 1,19
70 PRINT"Use the cursor keys to move and alter.  SPACE to finish."
80 FOR mp=0 TO mch-1:LOCATE 9,6+mp*2:PRINT"WACCI"40+mp:GOSUB
210:NEXT
90 FOR mp=0 TO mch-1
100 IF mf AND 2^mp THEN LOCATE 30,2*mp+6:PRINT"(no stock)"
110 NEXT
120 mp=0:kp=0
130 GOSUB 1010
140 WHILE kp<>4
150 num(mp)=num(mp)+(kp=1)-(kp=2):GOSUB 210
160 GOSUB 1000
170 WEND
180 mags=0:FOR x=0 TO mch-1:mags=mags+num(x):NEXT
190 LOCATE 1,22:PRINT"Thank you for your order."
200 PRINT"Please send a cheque for £";USING"##.##";0.5*mags:END
210 LOCATE 27,6+mp*2:PRINT num(mp):RETURN
```

The Directory

This directory will be printed each month to show that there are a lot of people still supporting the CPC. If you are mentioned and don't want to be, aren't mentioned or your listing is incorrect then please let me know and it will of course be corrected. Also, don't forget that WACCI has it's own book, software, tape and disc PD libraries, just look at page 30. Remember to send an SSAE if you can, it makes peoples jobs easier, and please mention WACCI when making any contact.

'Zines And User Groups

8Bit - Brian Watson, Harrowden, 39 High Street, Sutton, Ely, Cambs, CB6 2RA. The magazine for all 8-bit computers. A single copy costs £3 *(cheques payable to BA Watson).*

IEBA - See above for address. The International Eight Bit Association, for users and supporters of all 8 bit computers. Send two first class stamps and return self addressed label (*no envelope*) for more information.

Bonzo's Scrapyard - Dave Caleno, 29 Chapter Road, Strood, Rochester, Kent, ME2 3PX. Generally bi-monthly publication to compliment Bonzo suite of programs and tape to disc transfers.

CPC Format - Leon Brown, 43 Gwydir Street, Toxteeth, Liverpool, L8 3TJ. Tape 'zine, contributions welcome.

CPC South West - Dave Stitson, 4 Connaught Avenue, Mutley, Plymouth, PL4 7BX. Not just regionally based magazine dealing in general CPC matters with it's own PD library. A5 bi-monthly £1 plus postage.

Eurostrad - Thomas Fournerie, La Hameliniere, 50450 Hambye, France. CPC Magazine with the majority of French article translated into very good English. A very good read. Free membership, each magazine costing one International Reply Coupon.

UAUG - & **Prism PD** Martyn Sherwood, 13 Rodney Close, Bilton, Rugby, CV22 7HJ. United Amstrad User Group and CPC User magazine.

Independent Suppliers And Services

Capri Marketing, Computer Cavern - 9 Dean Street, marlow, Bucks, SL7 3AA. Tel 01628 891101 fax 01628 891022. CPC Soft and hardware items. Credit cards accepted. Send SSAE for list.

ComSoft - 10 McIntosh Court,Wellpark, Glasgow, G31 2HW, Scotland. Tel/fax 0141 554 4735 *(24hr ansaphone).* Email: cam1@cix.compulink.co.uk. Sells own developed plus other hardware and software. Credit cards accepted.

CrystalX Software - 11 Vicarag View, Redditch, Worcs, B97 4RF. Stellar Outpost, excellent strategy game. Tape £2.50, disc œ3.99 *(Cheques payable to A. Swinbourne please).*

Dave's Disk Doctor Service Ltd - 01892 835974. Disc salvage, data transfer and conversions. All profits from the company are covenanted to charity.

H.E.C. *(Amstrad Repairs)* - 47-49 Railway Road, Leigh, Lancashire, WN7 4AA. 01942 261866/672424. Quality repairs with most at standard charges. Free technical support, advice and information on all repairs carried out. Offer 10% discount.

1) Merline-Serve, 2) Radical Software, 3) King Arthur's Domain - Brympton Cottage, Brunswick Road, Worthing, West Sussex, BN11 3NQ. Tel/fax 01903 2067 E-mail:MerlineServe@sussex.co.uk. **1)** Service supplying mainly second hand hard and software as well as some general computing supplies, **2)** MagaBlasters, Who Said.That, Star Driver/Masters Of Space & Routeplanner. **3)** Stock of 160 PD discs call for details on all above.

Officeland - 10 Sterte Close, Poole, Dorset, BH15 2AT. Tel 01202 666155 fax 01257 421915. Stocks contain toner cartridges, laser labels, laser transparencies, laser paper, printer ribbons *(including DMP range),* Deskjet supplies, PCW supplies etc. Phone for CF2 disc prices.

Wealden Supplies - 60 Pitreavie Drive, Knights Manor, Hailsham, East Sussex, BN27 3XG. Tele: 01323 844371 *(7pm-9pm)* 3.5 discs. Send a SSAE for more details

O.J. Software - 237 Mossy Lea Road, Wrightington, Nr Wigan, Lancs, WN6 9RN. Tel 01257 421915/01267 421915.

SD Microsystems - *(Department Z),* PO Box 24, Attleborough, Norfolk, NR17 1HL. 01953 483750. CPC, PCW and PC specialists in software, supplies and hardware. Tasman Software main dealers.

Three Inch Drive Belts - AJ Howard, 65 Altyre Way, Beckenham, Kent, BR3 3ED. Disc drive belts for the CPC and the PCW. Flat fitting, with instructions. Only £2.25 including P&P.

Trading Post - Victoria Road, Shifnal, Shropshire, TF11 8AF. Tel/Fax 01952 462135. CPC soft and hardware items. Some Plus/GX4000 items also. Credit cards accepted.

Tronics North - PO Box 7149, Garbutt, Queensland, Australia, 4814. Tel/fax 0061 77 253766 *(international).* Possibly the only Amstrad dealer in Australia supporting the CPC and PCW.

WACCO - See **8BIT** Send A4 SAE for current information on Protext, Maxam, Utopia, Office, Model Universe and other new CPC product releases and upgrades.

The Adventure Workshop, 36 Grasmere Road, Royston, Oldham, Lancashire, OL2 6SR

WOW - Barbara Gibb, 52 Burford Road, Liverpool, L16 6AQ

Public Domain Libraries

Hammer PD - Leon Brown, 43 Gwydir Street, Toxteeth, Liverpool, L8 3TJ. New library, any help would be appreciated.

Presto 2 - Brian Key, 87 Sweetmans Road, Shaftsbury, Dorset, SP7 8EH.

RSPD - Robert Sparrow, 27 Rosendene Avenue, Greenford, Middlesex, UB6 9SB. About 170 selections, just revised catalogue.
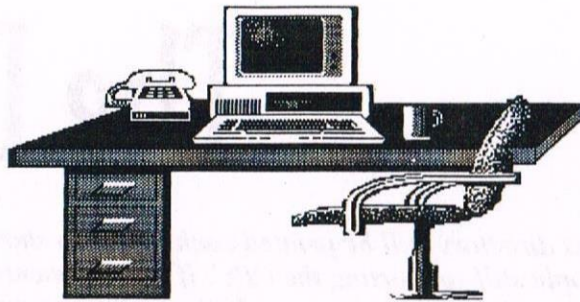
Ultimate PD - Paul Edwards, 26 Woodside Road, Irby, Wirral, Merseyside, L61 4UL. PD on 3" discs or tape.

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

Viva le CPC! Yes, WACCI went wacky as early September saw the release of Euro-WACCI. September was also the month that saw a bi-monthly WACCI due to lack of articles, come on people, get those fingers tapping. The WACCI Convention has happened and most youngsters will be back at school, college or university (good luck Crumpy). This also includes myself.

WHAT? WORK. NOOO!

I have just started a new demanding college course in Portsmouth. I'm studying Magazine Journalism, figures doesn't it <<*That should save me checking all of your spelling mistooks - JB*>>. So if I don't seem to be around for a while, take a little longer than usual in answering letters or orders and generally you don't hear a lot from me <<*I don't believe it! Don't make me laugh I've got a headache -JB*>> you all know why. Please bear with me as I settle in <<*and take the college over -JB*>> and life will soon get back to normal. I saw that John.

BONJOUR MEINE FREUNDE

The idea of a disc version of WACCI has been kicking around for a while now. It wasn't until the end of August that the idea really took off though. I stayed with Philip one weekend. Over the weekend we went to deepest Rutland to pounce upon Richard Fairhurst, which is a story in itself. From there we dragged Richard *(screaming)* to the Bowley's for a lovely evening of chat, many ideas, jokes, a bit of torchure <<*or is that torture -JB*>> and a lovely pasta meal from Carol - thanks *(Carol's Recipe Page anyone?)*.<<*you must have gone to the wrong house -JB*>> One of the good ideas to finally see fruition was Euro-WACCI.

Philip DiRichleau is the editor of Euro-WACCI, he says the aim is to continue bringing CPC community together. A while back Philip did a big WACCI drive in to Europe, sending out a lot of magazines. The general consensus was that whilst they liked WACCI in general, the subscription charge was too much,

being £33 for a year. So Euro-WACCI was born. The disczine will contain the best of the articles printed over the last hundred odd issues, plus hopefully bring in some of it's own articles and letters from the Europeans, and of course our international friends. Euro-WACCI will be similar in house style to our paper magazine and run in the same humour <<*Bad jokes in other words -Philip*>>.

Euro-WACCI is PD *(please feel free distribute)* and will also be of interest to regular subscribers of WACCI, as will the PD and programs on the reverse side of the disc. I received the first issue this morning and was extremely impressed. Especially as it's only been about two weeks in the making, such is the expertise of those involved. Euro-WACCI will be released approximately every two months and I'll keep you up to date on how it's going.

You can get a copy from Philip at 32 Arboretum Avenue, Monks Road, Lincoln, LN2 5JE, myself or various other WACCI *(and hopefully non-WACCI)* members. Please enclose a disc *(3" or 3.5")* and an SSAE. Philip has asked me to extend his thanks to Richard Fairhurst for the coding... **"This man eats machine code for breakfast"** I remember Philip proclaiming in utter glee.

EASY-PC

Starting next issue, Angie Hardwick has setup a PC problem page. Angie's going to try and find out the answers to PC related problems every other issue. This will be on a test run for six issues *(worth)* to see how it goes. If the general response is good, it will stay. If you don't like it, the page will be dropped. Questions to Angie, complaints to Fair Comment.

THANK CRUMP IT'S TETRIS

Da da da da da da da da da daa da da d d d d da da daaao. That was the theme to Tetris. It works, honestly, I've just spent the last ten minutes perfecting it. Sad aren't I <<*mgffkn -Muffled Ed*>>. That was supposed to be a really good intro all about Simon Crump's Tetris game called Super Tetris. It's finished now and available as PD. I haven't seen a finished version yet, though it's been discussed in comp.sys.amstrad.8bit, the Amstrad newsgroup on the internet.

I saw the program during it's production stages though and it was pretty nifty then. I'll ask Crumpy nicely to send me a copy and forward that to John for the PD library, so you'll be able to get it there. Let's hope someone reviews it soon and lets us all know what they think.

HALLO THAR!

Otto is the rather odd disczine that Nicholas Campbell manages to produce every now and again. The first four issues have been quite nice, but nothing mould breaking. However, issue 5 is about to change that. A few articles in it have upset some people, most notably the *"jokes"* page. Otto is available from KAD, but if you send a disc and SSAE in the next few weeks I'll copying it for free. I don't know at the moment whether it will be in the WACCI PD library, but I should hope so. I also hope someone will review it for a forthcoming WACCI. Expect some sort of retaliation I think.

BARGAIN DUNGEON

Merline-Serve *(me)* are offering a 20% discount on all orders of £20 or over. Also, colour 6128 monitors at just £30, which includes Securicor delivery *(no discount on that though)*. This offer is open until the end of November *(December for overseas)*.

Angela

Market Stall
with Angie Hardwick

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

What a brilliant day I had at the Convention this year. I can honestly say that this year's was the best yet, it was certainly the most relaxed and I thoroughly enjoyed myself. Although my pockets were a bit empty, the trouble was that there were so many bargains it was very difficult to pick what to buy. I would like to say a big thank-you to the following people whose help made this day a big success. First and foremost to Jacquie without her help I'd never got everything done, she also manned the Market Stall all day. Thanks mate.

SPECIAL THANKS

Chris who did all the posters for me they were terrific and for running the games competition. James Coupe who once again did stalwart service as and when needed.

Doug who copied PD most of the day. Carol for organising the raffle. Franks wife Margaret who took the baby off for a nice walk and gave me a break. Clive for his generous donation of goods for the WACCI stall. Dave Caleno who copied 100 tapes onto disc for me you're a brick Dave. John Bowley who supported me all the way.

Brian Watson who's faith in the convention made me keep going even when it looked like I should cancel. BTL for being so helpful to members.

All the suppliers who had faith enough to come and hump their goods up those dam stairs, the gang of kids and adults who helped with the humping. To my financial backer for having enough faith to back me anyway.

Last but not least to you, all the members who purchased tickets and turned up making the day a very special day for us all. See you all next year I hope. *Thanks once again.* *Angie*

NEWSFLASH

Take note all you PC'ers, after talking to John and the committee it as been decided to run a PC problem page on a bi-monthly basis to try and answer any problems that you may have.

What I need is for you to send me some questions, but when you do write please let me have a detailed specification of your setup *(and I do mean DETAILED)* that is so my technical expert will know all the in's and out's so to speak. Once I've had the specs I shall record it on your membership index card so hopefully unless you upgrade I will have these details for any further questions. Well there you go over to you!!!!

FOR SALE:

Two Colour Monitors **£60.00** ono, Two 6128 Keyboards **£30.00** each ono,. Two Tape Recorders with leads **£5.00** each ono. Two Manuals for 6128 **£10.00** each ono. Four CPM Discs 1 to 4 **£5.00** for 2 discs. Joystick in box Quickshot 11 Turbo **£5.00** ono. 5.1/4" Disc Drive **£25.00** ono. Advanced Art Studio and Manual **£6.00**. Tasword in case with Manual **£8.00**. AMX Mouse and Stop Press and Manual in Box **£15.00**. 80 3" Discs at **£1.00** each. 50 5.1/4" Discs **25p** each. Disc Games **£2.00** each.

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PLEASE CONTACT: *Joe Hunter, 5, Newman Street, Higham Ferrer, Northants. NN10 8JW TEL: 01933-387529*

FOR SALE:

CPC 6128 Keyboard drive Manual **£25.00**. CTM644 Colour Monitor, cables etc. **£15.00**. A monochrome Monitor (Green) **£10.00**. The Legendary Microgenics systems Romboard with Protext, Prospell, Promerge Plus, Parados and Utopia Roms on board. Original documentation on the last three items. **£45.00** SD Microsystems 3.5" CPC Drive with cables, power pack, documentation etc. **£35.00**

To anyone prepared to call and take the lot I would be happy to add other bits and pieces such as software, books and disc all for **£120.00**
PLEASE CONTACT: *Mike Crook 33, Baulk Lane, Harworth, Nr Doncaster. S.Yorkshire DN11 8PF TEL: 01302-742019.*

FOR SALE:

Proprint On ROM **£6.00** inc postage.
PLEASE CONTACT. *Ray Neal, 56, Houldsworth Crescent, Coventry CV6 4HJ TEL: 01203-362063.*

FOR SALE: SPARES OR REPAIR

One Star LC-10 Colour/Mono 9 Pin Printer and Manual requires printer cable and ribbon *(Print head locks up during use).* One Epson LX 86 Mono Printer and printer cable no manual *(broken top pin).*
PLEASE CONTACT: *Jonty Jones at 17 Beech Way, North Seaton, Ashington, Northumberland NE63 9TD.*

WANTED:

Harold Mottram wants "The Image System" **PLEASE CONTACT** *Harold at 45, Normandy Road, Hastings East Sussex. TN34 2ND*

Ray Neal wants: Brunword ROM Module Mk 111 *(around £25.00)* and Brunword Font Designer disc *(around £3 to £4.00)*
PLEASE CONTACT *Ray at 56, Houldsworth Crescent, Coventry CV6 4HJ TEL: 01203-362063.*

Frank Frost wants: 3.5" drive for his 6128
PLEASE CONTACT *Frank on 0113-2939374 anytime (maybe answer phone).*

Andrew Osbourne wants: Any old Adventure/Strategy/War games on tape of disc 3" or 3.5". He is also after mega drive II games for his son.
PLEASE CONTACT *Andrew on 01923-333014.*

Clishmaclaver

It's still Scots for gossip

Well hello there everyone. I hope that if you came to the convention, you are now fully recovered. Wasn't it a great day and aren't we all looking forward to next years. Angie please take note that there will probably be twice as many folk attending next year after they read the convention report and see what they missed out on! Seriously though it was a great day and well worth the wait. Thanks Angie.

UP ON THE ROOF
At the convention I had the pleasure of a little chat with Andre Howard. Andre is in the process of building his own home and showed me some photos of the building work. It seems that the roof of the house has a grass covering to keep the warmth in. I was amused was Andre told me that he has sprinkled some poppy seeds on the roof too.

I mentioned jokingly to Andre that a tree might be nice only for him to tell me that he has a christmas tree in mind for a bit of unusual decoration!

I hope that I have got this acurately reported Andre as I spoke to so many people that day, I may have some of the facts confused - but it still makes good reading eh!!

THREE STEPS TO HEAVEN
An amusing conversation took place as Christine Raisin was leaving the convention.

Christine is disabled and had to go down the stairs backwards on her knees.

As you can imagine this is not the most ideal way to make a ladylike exit from a building and it put Christine in a lot of pain and is very stressful.

However, bearing in mind that there are a few folks out there who think that a WACCI convention is for the 'pipe and slippers brigade' I remarked to Christine that if we could video her departure then then it might change a few minds.

I would like to point out that my remark was not intended in any way to offend Christine but to hopefully make light of an otherwise harrowing situation.

Christine realised this and we had a little giggle, after all there aren't many computer conventions where you leave on your knees!

CONGRATULATIONS
I would like to draw your attention to a very special celebration that takes place this month. Cliff and Elsie Britten will be celebrating their GOLDEN wedding anniversary (October 4th). The date also sees Cliffs 70th Birthday so its a double whammy for the Brittens.

> **Cliff and Elsie,**
> **All your WACCI friends send you their hearty congratulations and the bestest of wishes.**
>
>
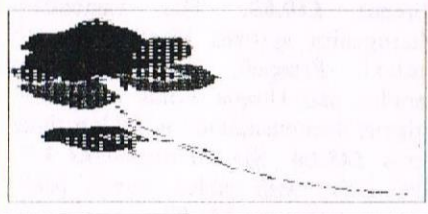
MAKE MINE A LARGE ONE
As you may have read in the convention reports, I celebrated my 40th Birthday on the 25th September and Angie very kindly made me a Birthday cake. It was absolutely delicious so if any of you out there will be celebrating a special occasion at next years convention, Angie has offered to do something for you.
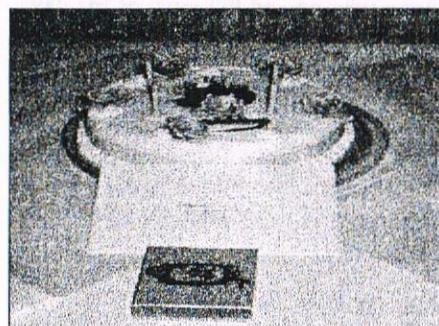
Well if you are thinking of asking her to make a cake, make it a LARGE one as I had to share mine with nearly everyone there so I didn't get to bring much home to have on the actual day.

NOT FORGETTING WACCI
Talking of Birthdays, did you realise that this issue celebrates WACCIs 11th Birthday. So a very Happy Birthday to WACCI and may there be many many more.

AND FINALLY
Don't forget that if you have any good news, Weddings, Anniversaries, Birthdays, Christenings, New CPC's, in fact just about anything that you would want to tell the world about, then tell me first and I will announce it to the world. Well the world of WACCI anyway.

Well that seems to be all I can squeeze out for now so I'll sign off and see you all next month.

Byeee *Carol*

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Homegrown, PD Extra, Discs 1-18:
Dave Stitson, 4 Connaught Avenue, Mutley, Plymouth, PL4 7BX   ☎ 01752 254404

H1	Aj's Concept Disc	X4	MS800, Bonzo Blitz	8	Comms
H2	Aj's Twilight Zone	X5	Big Batch, Pools Predictor	9	CP/M utilities
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H6-9	Games 1-4	1	Forth Programming	11	Adventures
H10-14	Utilities 4-8	2	CP/M utilities	12	Cobol
H15	Pagesetter 64	3	MBasic	13	Demos 1
H16	Family Tree	4	PowerPage, RAMbase,	14	Amiga Graphics 1
H17	Family History		PD Planner, RAMdisc	15	Flags, Animator Demo
X1	Maxidos, Procopy	5	CP/M Games	16	PPC Pascal, ZBasic
X2	Super Meddler, Hack Pack	6	Games	17-8	JRT Pascal
X3	Bonzo Doo Dah	7	CP/M+ utilities		

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19-21	MicroDesign Art 1-3	35	Picture 4	43	Pictures 5
22-4	Pictures 1-3	36	Teach Yourself Pascal	44	Demos 2
25-6	MicroDesign Art 4-5	37	Adventures 2	45	Paradise Demo (Paradox)
27	Mini Print Shop	38	Games 2	46	The Demo (Logon)
28-9	MicroDesign Art 6-7	39	Logos, Women & pics	47	Utilities 1
30	GPaint, RSXlib	40	MicroDesign Art 11	48	Adventures 4
31	Amiga Graphics 2	41	Eye of Shadows & advs	49-53	Pictures 6-10
32-4	MicroDesign Art 8-10	42	22disk/22nice for PC	54	Parrotry demo & clip art

Discs 55-84:
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56	Star Trek pics, music	66	Overscan demo (18+)	76	Megaparty Demo
57	ZDE & CP/M utilities	67	Demos 7	77	Computext, pictures
58	Overscan Pictures	68	Utilities 3	78	Games 4
59	Demos 5, Face Hugger	69	CCC 4 fanzine	79	Games 5
60	Digital Dreams	70	Disc Full 6 fanzine	80	Small C & Interpreter
61-62	Word Games 1-2	71	Disc Full 7 fanzine	81	Printmaster
63	Adventures 5	72-3	Demos 8-9	82	CP/M utilities
64	Demos 6	74	Epic, utilities 4	83-84	Printmaster Graphics

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89	Pictures 11	103	Clip art 1	121	Soundhakker v2
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91	Protracker, Discomagic etc.	109	AMS-MIDI, MusicPack	123	Otto 1-2 fanzine
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94	Demos 12	112	Demo-makers, Basic tutor	126	Street Warriors
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