

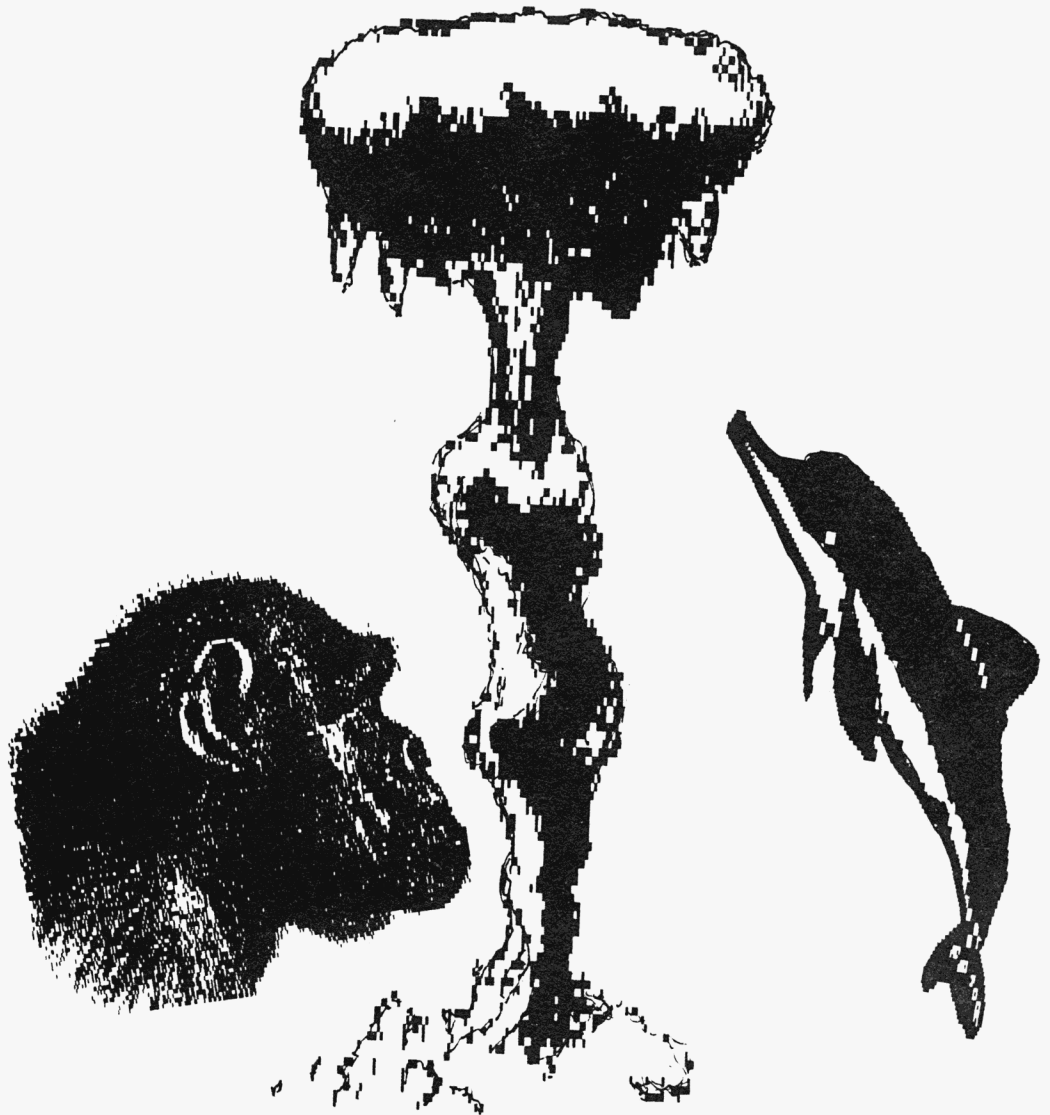
THE UK'S ONLY SERIOUS CPC MAGAZINE

Issue 57 £1.50  
August 1992

WACCI PROBE:

WARNING

Reading WACCI will raise your  
intelligence with a bang!



IN THIS ISSUE:

Beginners Basic, Letters, Competitions, Machine Code,  
Comms, Help-Line, Discounts, Book and Tape Libraries,  
Public Domain and Homegrown Software and much more...

WACCI

# CONTENTS

3 Thanxs & Stuff	<i>I ramble on and on and on ..</i>
4 Discounts Page	<i>Get it off with WACCI !</i>
5 Fair Comment	<i>Probably not .....</i>
12 Protext Advert	<i>The Protext advert</i>
13 Very basic Basic	<i>Beginners Basic</i>
15 Inspiration	<i>Read tracks and sectors</i>
17 The Expansion Slot	<i>Interfacing the CPC</i>
19 Foreign Languages	<i>Select the correct language</i>
21 ColourDump3	<i>The review</i>
22 The WACCI Compo	<i>Enter and occasionally win</i>
23 Treading the bauds	<i>Comms - getting started</i>
25 Green grass of home	<i>Basic programming principals</i>
27 Square roots .....	<i>More about the first compo</i>
28 WACCI disc libraries	<i>Growing Fast</i>
31 Who's Who	<i>Not Guilty, M'lord !!!</i>

Copyright WACCI 1992(c). Material may not be reproduced either in whole or in part without the written consent of the copyright holders. WACCI cannot undertake to return unsolicited material unless it is accompanied by a suitable stamped, self-addressed envelope. No payment whatsoever can be offered or made for any material selected for publication.

**Production Method :** WACCI is typeset, produced, edited and laid out using, Protext, Promerge, Prospell, OCP Art Studio and Micro Design Plus on the CPC 6128 and printed using an Epson LQ-400 24 pin printer.

Front Cover designed by Mark McIntyre and P Luck.

WACCI is Printed by :

William J Butler & Co Ltd, Town Hall Printing Works,  
Station Road, Bulwell, Nottingham, NG6 9AR, 0602 278929

Lithographic and Letterpress Printers

WACCI : is the computer club for the Amstrad CPC and PCW computers. The club magazine is distributed monthly.

# The Telephone Help-Line

Tony Walker, (0772) 651698, Preston, 10.00am to 10.00pm, Comms, Protext, Prospell, Tape to disc, CP/M on ROM.

Brian Norris, (0832) 273973, Peterborough, a specialist on MasterFile III (no less) plus general advice.

Norman Buxton, (0260) 223257, Macclesfield, Basic and farming? <<Control codes a speciality -Ed.>>

Stewart Peppiatt, (0245) 353903, Chelmsford, Basic and Machine Code, DMP2000, VDE, Scrivener and general problems. <<A Tech-Head -Ed.>>

Peter Campbell, (041) 554 4735, Glasgow, OCP Art Studio, Vidi, Basic, Micro Design & Art Programs, CPC plus machines. <<A Comms Guru as well -Ed.>>

Frank Frost, (0983) 882197, Isle of Wight, 4.00 to 10pm, VDE, CP/M and Protext. <<He LOVES a chat but nobody seems to call him up -Ed.>>

Peter Ceresole, (081) 878 0391, London, Protext, Promerge, Utopia and Nukes (amateur status) <<Total nutter to be avoided at all costs -Ed.>>

Paul Graves, (0304) 812342, Ash, All varieties of Pascal (inc Turbo, JRT & Standard). Phone between 5.00pm and 9.00pm Weekdays.

Paul Dwerryhouse, (0244) 534942, Deeside, Clwyd, Basic, Bank Manager, WACCIWORD, WACCISPELL (ISPELL), and a sympathetic ear. <<He's pretty good at accounts. -Ed.>>

Rob Scott, (081) 552 8900, East Ham, any & all hardware problems plus tape to disc, disc to disc etc. << An electronics genius, -Ed.>> Now with extra Bonzo.

Nigel Mells, (0784) 250763, Ashford, Tape to disc problems, Basic programming and a general natter.

Mike Lyons, (0942) 59942, Nr Wigan, Basic, Stop Press, Dk,tronics Speech Synth, rodos and general help.

Clive Bellaby, (0602) 725108, Nottingham, 8.00pm to 9.00pm, Basic, Cobol, Forth, VDE CP/M, Protext, Promerge. <<Dominoes a speciality. -Me.>>

Chris Smith, (0252) 24721, Aldershot, Comms, BB's, Protext, Promerge, Prospell, Utopia, Brunword and general programming problems.

**Please Note:** This help-line is provided on a voluntary basis by club members to assist other club members. This service is provided to help you. Please call help-liners between 7pm and 9pm (unless stated otherwise.)

If I receive reports of this service being abused by software pirates I will close it immediately.

# W A C C I

Edited by 'The Management'

0602 725108

---

Owned By

The Club Members

---

Conceived and Founded by

JEFF WALKER

Developed and Expanded by

STEVE WILLIAMS



To win this months competition all you have to do is decide which is the least common of the following:-

*A British gold medal (Olympic.)  
An English 'test century' (Cricket.)  
An honest advert (any media.)  
WACCI arriving late (since issue 50.)*

Answers on a postcard to:  
T Wogan, BBC TV, Smiles End, CF2 3JN

## HELLO, HELLO, GLAD TO BE BACK

Another page, another spelling mistake (I never claimed to be perfect.) Once again, on or about the 16th your WACCI drops on the doormat and you rush to pick it up to give you something to read on the way to school, work etc.

Time as always is our main problem, there are not enough hours in the day to do all things we should do, such as producing WACCI, answering letters, sending out software orders and many other tasks to numerous to mention.

If you are kept waiting, please accept our combined apologies, we are doing the best we can. sorry! grovel!

## THE DISC LIBRARIES

Public Domain and Homegrown discs continue to sell well and the library is still growing in size (we're up to 44 PD discs and 18 homegrown discs. Who said the CPC was dead.

The new librarians have settled down into their new duties, despite an odd panic or two. I sent Mark Riley 10 discs to get him started, the second order he received was for 19 discs, Oh

well, we can't all be clever. We are busily creating good relationships with other PD libraries such as UAUG, Yorkie, Presto, Robot and more.

We believe that we must all work together to produce high quality PD software at the lowest possible price.

## SPECIAL THANKS

Once again, can I offer my special thanks to all the members who give up their time to help run the club in the efficient manner we've come to expect.

There are far too many to list, I'd need a whole page to do that - they know who they are. So from me, WACCI and all - thanks a lot.

## ALL FORMATS SHOWS

If you missed the Birmingham show, don't worry, they'll be another one in September and we'll be there. WACCI will be at these shows:

- |           |                                              |
|-----------|----------------------------------------------|
| 6th Sept  | Birmingham J6/M42<br>National M/Cycle Museum |
| 12th Sept | London (South)<br>Sandown Park Race Course   |
| 19th Sept | East Midlands<br>Donington Park Race Course  |
| 4th Oct   | North - Leeds<br>University Sports Centre    |

So come along and meet some fellow CPC fans and me. Yes, good old uncle Clive will be there along with various leading lights from WACCI.

# THANK & STUFF

The New  
Editor

## MONEY AND THINGS

The clubs finances continue to improve and we're doing quite well. Paul just about managed to wade through the 90+ subscriptions that fell due as issue 56 was distributed. The next headache is issue 62, when 145ish subscriptions are due for renewal. The WACCI page in AA, is continuing to bring in lots of membership enquiries. All in all we are doing well financially.

## MISSING, LATE AND LOST

Several regular features are missing, such as PTL, The ABC of PD and Forth. Don't panic, they'll be back. WACCI is proud to introduce you to two new mini-series, John Hudson is looking at languages and DBASE2 whilst Steve Hammond introduces a series about the CPC and interfaces.

## COMPETITIONS

Following last months plea, we've been inundated with entries. Over 40 have been received since issue 56 hit the streets some 3 weeks ago. There's still time for you to send in your reply, so get writing .... Today.

## HEALTH AND HAPPINESS

Its been a much better month, Mike Lyons has almost recovered from his operation (have a speedy recovery) and Josie (She who must be obeyed) who is also called 'The Wife', is back at work (part time) after a long illness. If any other members are feeling under the weather, then from all of us:

*"We wish you a speedy recovery!"*

## \* DISCOUNTS \*\* SAVINGS \*\* DISCOUNTS \*\* SAVINGS \*\* DISCOUNTS \*

Following representations made on behalf of WACCI members we are pleased to let you know that replies have been forthcoming from the following firms:-

**SIREN SOFTWARE** of Wilton House, Bury Road, Radcliffe, Manchester, M26 9UR (Tel: 061 724 7572)

They are pleased to offer all WACCI members 10% discount on all their products for the CPC, including 3.5" disc drives, software and blank discs. They will also supply a copy of their 3.5" disc drive utility FREE with each disc drive ordered. Phil Craven wrote a very favourable review on Siren's 3.5" second drive in WACCI issue 28. As far as after sales service is concerned I, personally, have found them to be very helpful and they will be only too willing to help.

Siren's SONY disk drive is fully compatible with the CPC range and will format not only to 178K but has no difficulty with the addition of Ramdos or Romdos to format to 800K. The drive operates very quietly (so much so that you think it is not working.) It has a slimline housing, with its own power supply, has a twelve months guarantee, and includes disk utility software. Normal price is £69.99 + £4.00 Postage & packing but WACCI members get a 10% discount.

**BRUNNING SOFTWARE** of 138 The Street, Little Clacton, Essex, CO16 9LS (Tel: 0255 862308)

Peter Brunning, the author the Brunword suite of programs is willing to allow a generous discount on Brunning products. Members placing an order and using Access or Visa cards are allowed 10% discount but those of you who order by post enclosing a cheque are allowed 14% discount. The programs supplied on 3" discs for use on both the 6128 & 6128 plus are:-

Brunword 6128 with Brunspell & Datafile... £ 30 - less 10%	9 Pin Brunword Elite with Info-Script.... £ 92 - less 10%
Info-Script with Brunword 6128 & BrunSpell £ 50 - less 10%	24 Pin BrunWord Elite with info-Script... £ 90 - less 10%
9 Pin Brunword Elite..... £ 55 - less 10%	Elite Font Editor with 'Chelmer' & 'Clacton' £ 25 - less 10%

**CAMPURSOFT** of 16 Slatefield Street, Gallowgate, Glasgow, G31 1UA (Tel: 041 554 4735)

Peter Campbell and Jess Harpur run this outfit - So it must be good. Campursoft discount both MicroDesign and MicroDesign plus for WACCI members. Save £3.00 on Micro design plus, yours for only £11.99. Or you can buy both packages for only £27.99 (saving over £6.00 on the individual prices.)

**SD MICROSYSTEMS** of PO Box 24, Holbeach, Lincs, PE12 7JF (Tel: 0406 32252)

They will allow us a discount of 10% off all Software and Consumables in their extensive range. However this EXCLUDES any Hardware items but they are prepared to send such items post free. Examples of their software programs include PC-CPC Transfer software @ £24.95, Home Finance @ £14.95, Kwifile @ £12.50 and a suite of programs for the small trader which includes General Ledger £29.95, Stock Accounting £39.95, Small Trader's pack £29.95, Payroll program £52.50 and Graph-Master @ £14.95. Phone them on 0406-32252 for further information.

**DATTEL ELECTRONICS** have agreed to supply WACCI direct with their goods at trade prices, and more details of these items will be appearing in a later issue when we know exactly what savings we can offer you.

**MJC COMPUTER SUPPLIES** of 2 The Arches, Icknield Way, Letchworth, Herts, SG6 1UJ (Tel: 0462 670301)

Mike Cooper the big white chief of MJC has always been a keen follower of CPC users and is only too pleased to help out with any problem anyone may encounter. He is still a computer buff at heart. Since branching out in business he has to some extent succeeded because he is one of those who still thinks that the customer is number ONE. MJC are one of the few commercial mail order firms still supporting the Amstrad CPC market, covering as wide a range of Software & Hardware as they can get their hands on. I may be a bit biased but I believe this is the type of firm to encourage to ensure a steady supply of CPC goods. We can expect "Special Offers" on certain items in the form of an "on-going" list of discounted products. More news on this when details have been worked out.

**GOLDMARK SYSTEMS** of 51 Comet Road, Hatfield, Hertfordshire, AL10 0SY (Tel: 0707 271529)

Specialist software for the CPC's. Willing to give members of WACCI 10% discount off all Software and Hardware (But NOT off special offers or on disc prices). There should be an insert in this issue from GOLDMARK and please refer to same.

**PROPAC COMPUTER GROUP** of 153 Pickhurst Rise, West Wickham, Kent, BR4 0AG (Tel: 081 777 6241)

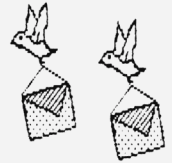
They are specialists in Citizen Printers and are able to offer an extra £20.00 off their discounted prices. If you are in need of a new printer and fancy a Citizen then I suggest you give Alex Kinch a ring. We await their new catalogue, which we are told will be issued in July.

That's it for now. I am still awaiting replies from some suppliers. As new discounts are arranged details will appear in WACCI near you. Please mention WACCI when replying to adverts - you know it makes sense - haggle that price! Stamper.

# Fair Comment



Mike Lyons  
85, Leigh Road  
Hindley Green  
Near Wigan  
WN2 4XF



## FULL-BLOODED ENGLISH MAIL?

*Hello children. Are you sitting comfortably? Then I'll begin. It's really nice to be back in the swivel chair in front of my CPC again. Two months is a heck of a long time. The withdrawal symptoms were unbearable.*

Thanks to all those who expressed concern over 'the operation', but in spite of that I'm getting much better. Whoever sent the wax doll with pins in it if you'll let me have your name and address I'll send it back.

For those who are interested in such things my doctor says I've had a *decompressive laminectomy of the cervical vertebrae C3-C7*. If anyone out there knows what this means please don't bother to let me know unless your explanation comes in words of less than 15 syllables. <<You've had your throat cut? That's less than 15 silly bells in total. -Clive.>> All I know is that I've had a lot of pain in the neck, (now I know what it feels like), and 18 stitches. I didn't even know I had anything cervical, (and the neck seems a funny place to have one), but that's nature for you. I've also had a very strange hair cut, (a sort of inverted 'Mohican'), but that's getting better now as well.

And now for something completely different. One of the tasks of a magazine like our beloved WACCI is to inform, so I'm going to inform on a company called M.J.C. Supplies.

This firm is one of the best mail-order companies with which I've had any dealings - and, believe me, I've had a few dealings. On the 'phone I've always encountered utmost politeness, (a thing which is all too rare these days) an eagerness to listen and be of assistance and the appropriate thanx. I didn't even need to mention 'You know who' or 'You know what'.

I am particularly amazed at the speed with which M.J.C. respond to orders. They have what amounts to a next day service - in spite of the Royal Snail. Every order I have placed so far has arrived on the second day after posting. Absolutely incredible. The only other companies which I've

heard of with service like this are Arnor, (in spite of branching out), and K & M Computers, of whom we seem to see very little these days.

Do you have a favourite, (or least favourite), mail order company? Good ones are so rare these days that we could all do with knowing who they are, and if they're good they deserve a plug. We also need to be aware of the bad guys so that we can avoid sloppy service and lost cash.

Speaking of which, are members aware that Phil Craven, formerly Microstyle, now has a new company. I am reliably informed that Avatar, (a rather appropriate choice of name), is being run by him. They are advertising in AA. If he still owes you money or kit, (I know of at least three people, besides myself) it might be a good idea to ask him for it back now, as he obviously has enough to start up a new company. If he doesn't owe you anything yet then beware of buying anything from this firm.

Mr. Craven, if you are reading this take note. I want my £82.95 back and I will hound you until I get it. I strongly suggest to other members in my position that you do the same. I could forgive someone for getting into trouble - I forgave Steve Williams ages ago - but I can't forgive rank dishonesty. Neither can I forgive someone who starts up a new company when he hasn't paid off the debts from the old one.

Might it be a good idea, Clive, to have WACCI keep a list of good and bad mail order companies and keep members informed. The list of companies offering discounts will, of course, help with this. Perhaps Stamper, in his role as Discounts Manager would be able to keep track of these things. Oh, well. Back to the day job. Here's a letter from Al Cooper...

Mike 'Letters' Lyons

<<Welcome back Mike, we're all glad to here your much improved. Any records would need to be accurate and legally acceptable. Hearsay information can get you into trouble! However, I know

how I feel when I see WACCI being (in my opinion) unfairly criticized (even if the writer feels they are fair.)

I was interested to read in this months CPC Domain a letter from John Craven of GVL Microform in which he states that 'GVL has no business relationship with Microstyle'. Now this is in direct contrast to most peoples assumptions of the situation.

Now keeping records that are not accurate can lead to real problems as you are threatened with a legal action. It is probably much better to relay factual information to members as and when it occurs - after all who (journalists [and lawyers] excluded) will argue with the hard facts?

I applaud you actions in chasing Microstyle in order to get your money back. I'm sure that other members who are owed money by Microstyle will contact you to arrange a joint effort to recover that which is due to you.

That's enough about the nastier side of life, let's move on to a whole range of happier subjects. -Clive.>>

## SHEER ENJOYMENT

Dear Mike, I am sure that I can speak for all WACCI-ites, when I say that we are all glad to hear that you are making a good recovery from your op. Yes, it's him again, already, and you haven't quite recovered yet from the last letter. Issue 56 was nice, in more ways than one.

We had quite a few really good articles on programming of various kinds, and we had a nice article on a serious subject from one of the fair sex. Not that I thought they couldn't do such an article, but programming ladies are scarce on the ground, and on paper. (And everywhere else. -Ed.)

On HYBRID PROGRAMS, it's a very good idea, Pat Love is to be commended for bringing it to the attention of the members; but some of us have been at it already. I have little or no experience of M/C (machine code), but I do hope that with the help of George and some others, I might find enough "Inspiration" to get to grips with it.

Lazy old man that I am (66 in July), I enlisted the help of Stewart Peppiatt, who works well with machine code to write a very effective piece of code for my latest program, "DISCNDEX", some members have already got copies of it. It may be considered worthy of a place in the PD library, so that all can have a bash at it.

It reads the CAT of each disc into memory with Stewart's code and will then file label all your discs, after which you can save all the CATs thereof to an ASCII file, which is easily searched by Protext to find any program. You will find it on this disc. The instructions are built in, as is my habit.

Pat's idea of gathering a library of M/C routines for use in our programs, is an excellent one, and I suggest that you send her a copy of my prog so that she can copy off Stewart's M/C file as, say, "CAT2MEM", and put it in her library. Perhaps she herself did not intend to gather the bits, but who better could there be.

I will need to read her article about ten times, so that the lessons may sink into the almost impermeable rock of my mind, but I shall persevere with it. As soon as I have recovered from the paying of my TV licence, I must order "The Firmware Guide" and it's disc, so conveniently gathered together for us by Thomas Defoe and friends. Perhaps that will help me to assimilate the M/C lessons, or maybe it will further confuse me. We shall see. Ta for now, and God Bless.

AL "The L Plate" Cooper  
Lisburn, Co Antrim

PS. If Pat can handle 3.5" discs, you could send her this one, or get her to write and I will send her a 3". There would be no need to return the disc, as people sent me 35 of 3.5" in the last month. Thanx to all of them.

<<Hello again Al. It really is nice to be back in the chair again. To be accurate it's nice to be in ANY chair again. Your birthday's in July? So's mine. Happy Birthday to us, (though it will be long past by the time you read this - who cares?). I'll be 36 on the 31st. Cards to Fair Comment please.

Your DISCNDEX program is developing very nicely and I've passed it on to St. Clive to see if he will add it to

the library for you. He will, I think, pass the disc on to Pat when he's finished with it.

I was very impressed with issue 56 myself. Perhaps having had to stand, sit or lie back from WACCI for a couple of months has helped, but I think the magazine is going from strength to strength. Look at the quality of the articles we have just read, (royal we), the sincere concern and helpfulness of your letters editor, the high standard of typograf, err, tipograph, erm spelling mistakes, (no mistakes in words of less than four letters - or is that letters of less than four words?), and so on.

Enough about me. The Firmware Guide. You've heard about the B.F.G., (Big Firmware Guide), but never seen one, this is the F.G., ('cos it's smaller). Just like mummy told you, the best things come in small packages. No longer do you have to search through umty-tump A4-ish sheets, only loosely held in a ring-binder which is 1 size too small. No Bob Taylor and Thomas Defoe have boiled the essentials down into an 80 page A4 book(let) and added a disc. If you've not got it by now GET IT. (Right lads, that's a tenner each... What do you mean two photos of Pavarotti? -Mike.>>

#### POETRY? NEVER!

Dear Mike, Regarding the "Competition Spot". Perhaps a 'Brain Teaser Spot' might be considered as an alternative to *Competition*. Competitions mean prizes, some winners - lots of losers.

Of course, Brain Teasers do offer prizes, but this is optional, surely.

I didn't enter the first competition because I found that the Amstrad couldn't calculate the large numbers accurately. In fact, I suspect that the numbers *thrown out* by the program may be wrong.

Nevertheless I learnt quite a lot by tackling the problem and that's the beauty and joy. Having to submit a response to a competition puts undue pressure on the participants as well.

May I suggest that a "Brain Teaser" with its solution following in the next month's magazine will be a possible solution to the lack of interest shown by members? However, you would not have the feedback as in a competition. What am I saying? WACCI

readers are pacifists, sitting reading WACCI like the Beano. (*That'll cause a few outcries.*) I prefer watching "Star Trek" myself (*so do I, -Clive.*) second to reading WACCI, that is.

George Ho-Yow  
Hayes, Middlesex

P.S. Here's a comment about your PS in WACCI 56 called "Expensive Pastimes".

Touche Mike, if with a pun  
Of my name you'll make such fun  
From now on I'll call you Mick  
(Bet that'll get on your wick.)

I'm not very good at verse  
So this poem's gonna be terse  
No hard feelings Mick  
Just be careful on whom you pick

Thought I'd add my two new pence  
To poet's corner, hence  
Started by David and St. Clive,  
Long may P.C. thrive!

Cheers, Mike. Hope you're recovering from your ailment. George

<<Well, you've asked for it.

Oh George what have you done?  
To take offence at my poor pun  
How simple it is to make a game  
Of yours or Clive's or my own name.

Getting it right you need to see

Every plain possibility

Of mixing and matching the sounds of words

Rolling around those nouns and verbs

George Ho-Yow's not so easy to fix

Everything's foreign so how can I mix

How-Yo? That's a good one, Oy How? Not too bad

Ow-Yoh is just dreadful, Wo-Hoy? very sad!

You can do very little with Mr. Ho-Yow

Only my favourite trick is left now

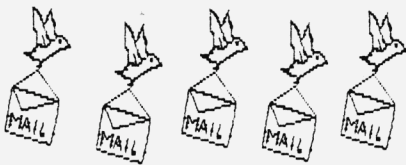
With your whole name I've just made a new verse. Look and see!

It's called an *Acrostic*! Look very carefully at the first letter of each new line. Clever, eh? As you'll see from the other letters I'm getting better and better. Unfortunately this is not true for my poetry.

It is my personal opinion that "Brain Teaser" or "Competition" will still suffer from what I consider to be our greatest enemy - *apathy*. Apathy used to rule but it couldn't be bothered. (If you think your comments will generate an outcry wait 'till I've finished.)

People are, very often, simply content to "Let George do it." That's why, (or how), Clive's doing it. Nobody else would have bothered, (probably), and WACCI would have died a death. Clive has organised enough people who are not quite as apathetic as the rest of us and, galvanised, (coated in zinc), by his dynamic, (generating electricity), personality, have put together the club, (a wooden weapon), and the magazine, (the bit of a gun that holds the bullets), to give us the publication, (a man who runs a pub), which we are now reading, (a town in Yorkshire). WACCI, the club AND magazine, is probably the best thing to happen to the universe since the big bang, (what happens when you hit a magazine with a club). Come on all you apathetic pacifists - here comes a dirty word - *participate*. You'll love it.

By the way, George, if you persist in this childish attitude towards my name I'll send Clive and Alan over to your house and get them to sing to you. If that doesn't make any difference I'll come over and sing to you. - Mike.>>



#### A SAD DEFEAT

Dear Mike, You may well be interested to learn that my problems with ROMdos have been resolved. The 6 slot ROMboard with ROMdos etc. are to be returned to Siren who will refund my money. This is not a satisfactory result as far as I am concerned for, as you will recall, it was hoped that any forthcoming solution/s would be collated in full and made available

for any WACCI members having similar problems with their Plus's.

To put you more in the picture as to the course of events, I rang Peter Campbell but his line seemed to be continually engaged, so I sent him a letter with all the details as I saw things. He was kind enough to ring me up on Thursday evening, when he told me that he had in fact spoken to Simon at Siren who stated that they had experienced problems with the Plus machines and that they were producing a new version for the Plus's. Peter himself could offer no obvious solution, but suggested trying all the actions such as you yourself had me carry out previously. In conclusion he did say that it would be advisable to 'phone Siren and for me to take my boards to them for them to test etc.

I rang Siren today and spoke to Simon Cobb himself who asked me to repeat the problems experienced and in reply he stated that the board etc worked alright on their Plus and that in the light of this to return the board etc. for a full refund. I did, in fact, ask if it was possible for me to take them over for inspection/test, but he just repeated that they would refund my money upon their return.

I felt a little deflated over this as perhaps my contacts with Siren became 'a pain in the neck' and they were quite ready to clear the problem as quickly as possible. I only hope that this will not cause any embarrassment to WACCI as a whole and, more particularly, both to you and Peter Campbell. That, in itself, would really hurt me. For what it is worth let me list the problem contents as best as I can recollect:-

1. In response to my original order ROMdos was fitted to my existing ROMBO board as per Siren Software's instructions. There was no response upon the Plus monitor.
2. Siren were informed and they stated that as I had a Plus, different ROMs were required. I reminded them that I had clearly stated with my order that I owned a Plus.
3. Fresh ROMs were received and fitted to my board and, as before, there was no response. Oh well, back to drawing (or Rom) board.

4. I decided that perhaps it would be better for Siren to supply me with their (K.D.S.) board with the ROMs fitted. The ROMs were returned and eventually the board, complete with the ROMs fitted was received.

5. When fitted to the Plus everything seemed all right but, when the Protex and Prospell ROMs were fitted into the Siren board, though at first everything seemed okay, when I went to print a letter what appeared upon my printer simply amazed me. I only wish that I had retained the printout for you to see as it was complete rubbish in the layout sense. The actual text was correct but, scattered around the sheet of paper. At this point I disconnected the board completely and finished the printing of the letter by using my Protex disc.

6. As removal of the ROMs was, to me, something of a 'your life in their hands' operation, the Protex and Prospell ROMs were reluctantly removed from the Siren board and replaced on my ROMBO board and this was connected to the Siren board's expansion connector. Eureka! All seemed to be working and Protex functioned correctly in all its aspects but a little later I realised that Prospell had not been used, so it was put to the test and it failed completely.

The Plus informed me that there was not a dictionary disc in 'B' and to change it, but the text disc was in 'B' with the dictionary disc in 'A'?????. So in an effort to prove a point, a disc with text was placed in 'A' and a dictionary disc placed in 'B', but the result was still the same.

It was at this point that I spoke to you on the 'phone and after mentioning various points you got me to try 'SM in Mode 2 with no disc in either drive. Which, as I told you at the time, displayed:- "Text in A ..... Dictionary in A ..... Printer off."

Well now, the Siren board with its ROMs is packed ready for posting tomorrow, and my old dependable ROMBO board with Protex and Prospell are once again back in place with my plus and functioning correctly as can be

seen from this letter. Thank you for your help and patience with this problem, I return your copy of the RAMDOS 'Manual' with thanks. It's slightly damaged where my daughter's 14 week old Golden Labrador managed to take it from my desk and chew it.

Please feel free to do whatever you wish with this letter. (Even put it in the bin, as it is a bit of a ramble.) I know we had hoped that the solution/s would be collated so that the facts could be made available to any other club members experiencing a similar problem, although I suppose mine could be unique insofar as my Plus may be the real problem. That's something I may never know.

I see from the latest WACCI that Clive has accepted my offer of help with the PD Library when the need arises. This can be my way of putting something back into the club.

Once again, many thanks. It was nice to talk to you. Maybe we'll meet one day. I shall endeavour to get to the All Computers Fair at Haydock Park next October, so I might I see you there. (I'll be there. -Clive.) Yours,

Doug Webb  
Chorley

<<Hello again Doug. As you can see, I've included your letter in Fair Comment more or less in full. The problems you've had are more than a sane man can bear. I'd have probably thrown the whole lot through the window and moved to a cave in Outer Mongolia by now. But then Chorley isn't that far different anyway.

I'm glad that you got in touch with Peter. He's extremely knowledgeable and, like all of us, eager to help with problems. I'm only sorry that the end result of all of these problems is the return of your money. This is especially true since it was on my recommendation that you tried ROMdos in the first place.

When I rang Siren on your behalf I found them to be extremely helpful and co-operative. If they can't find an answer I'm quite prepared to believe that there isn't one at present.

The last thing you found out says to me that PROSPELL, for some reason, isn't finding the B drive - as you've got a Plus machine there's a chance that it stores the drive information in a different memory location. It

could also have been that ROMdos was moving the drive info to a different place. I know that both of my drives 'move around' in memory depending which ROMs I've got switched in at the time. Arnor would probably have been my next port of call for help, but it's too late now, I suppose. Plus users beware. This disaster could have been yours.

As for patience, it's my middle name. (Recently it was spelt slightly differently), and I'm always glad to think I've been of some use - it tickles my ego no-end. I hope the dog enjoyed the manual. It really will have to learn the difference between ordinary paper and toilet roll some time. (Perhaps the manual wasn't the best place to start, though.)

Providing my head doesn't fall off in the next month or two I hope to see you, (and anyone else who's there), at the Haydock Park Show. You can marvel at my stitches - for a small fee, of course. Finally, Doug, welcome to our sweat-shop. We're always glad to have new slaves aboard. Have you ever rowed a galley before? -Mike.>>

---

#### A MUTUAL ADMIRATION SOCIETY

Dear Mike, Glad to hear that you are recovering from having your throat cut. Doesn't pay to argue with the wife does it?

WACCI arrived within one day this time as opposed to 5 days last month. At least I get it regularly, (*No I don't mean the Sunday Sport.*)

After reading it I have several comments:- How does Dwerryhouse, (and friends), do it? No sooner have I installed Ispell than version 6 is announced. Ispell only came out in February and for the price it is incredible value for money. Although it lacks the word search facility for crossword fans that was on Waccispell2 it is still a superb program. No doubt I'll be getting version 6 in due course (*of course and on course.*)

Pauline Russack's letter was also interesting. It was nice to hear of Rob Baxter again. Please give him our best wishes. Pauline, I have a favour to ask. Now that Rob no longer uses the CPC would he be prepared to donate his music discs to either WACCI or the public domain? <<Damn Good Idea. - Mike.>> I know that the Advanced Music

System is no longer available but those people who have it would love to hear Rob's stunning work. <<Hear, hear from up here.>>

Talking about the Advanced Music System, is there any chance of WACCI or Campursoft contacting Rainbird-or whoever owns the program, with a view to re-issuing it? Peter Campbell, turn that music down while I'm talking to you. The more quality software there is available, the better it is for all of us. <<What about it Peter?. -Ed.>>

Alan Tilling's program in VBB attracted my attention, primarily because I wrote a similar program some time ago. It occurred to me that members might find it interesting if two, <<different?>>, people wrote a similar program independently, and then their individual styles and methods were compared and contrasted.

I found Pat Love's article on hybrid programming very interesting. I've always avoided machine code since I found out how much hassle it was to print "Hello Sexy" on the screen. Pat could persuade me to change my views. I look forward to seeing some more examples - perhaps even a 'Partly Basic Hybrid Programming' series.

Well I've gone on for long enough. Better let someone else have their say. Bye sexy. <<?!?>> Yours,

Andy Frame  
Barrow in Furness, Cumbria

<<Well, now Andy. I never knew you cared. It must be something in the water. Paul Dwerryhouse is a deeply wonderful person. He must be 'cos his initials are, (in case you hadn't noticed), P.D. Program development is not something one usually finds in the Public Domain, but WACCI, as usual, is something completely different.

I hope someone out there can get something out of Rainbird or Telecomsoft or whoever. AMS was the best music writing program ever brought out on the Amstrad and it's a pity it's no longer available. Our younger viewers don't know what they're missing.

The idea of comparing different programming styles is a good one. It would give beginners an insight into the ways programs can be put together to produce the same result. However, I'm not volunteering to submit any of my efforts. That would be like

comparing a chimp to Shakespeare. <<My money would be on the chimp winning the first prize. -Clive>>

If anyone wants a short routine, the one below is an RSX which prints "Hello Sexy" on the screen. It's a MAXAM listing. Other assemblers may differ in the precise syntax they require. You can replace the message with anything you want, so long as you keep the ",0" at the end.

When you have assembled this type CALL &8000 and you will have a bar, (|), RSX command called "|HELLO" which will print your message on the screen when you type it's name. This isn't the place to go into how it works. Trust me. For BASIC users there is a BASIC listing which pokes the 47 bytes of code into the correct place and calls it. Just type in the exact listing given with a [RETURN] at the end of each line and RUN it.

#### THE ASSEMBLER LISTING

(By Mad Mike Lyons)

```

ORG &8000          } This bit
  ld bc,rsxtab     } sets up
  ld hl,wkspac     } the RSX
  jp &BCD1         } and tells
.wkspac           } the
  defs 4          } machine it
.rsxtab          } is there.
  defw nametab    }
  jp hello        }
.nametab         }
  defm "HELL",",0"+&80 } Name(s) of
  defb 0          } the RSX(s)

.hello           } The actual
  ld hl,message   } machine
.start          } code bit
  ld a,(hl)       } which
  cp 0            } prints
  ret z           } out your
  call &bb5a      } message.
  inc hl         }
  jr start        }

.message        } The
  defm "Hello Sexy",0 } message.

```

If you don't have an assembler (what are you doing reading WACCI?) then don't panic, type in *exactly* (don't change it) the following, (don't worry about putting in line numbers - the AUTO command does them for you):-

#### THE BASIC LISTING

(By The Very Nice Mike Lyons)

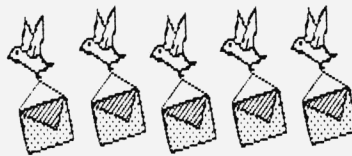
```

AUTO
MEMORY &7FFF
RESTORE 100
FOR i=&8000 TO &802F
READ a$
POKE i,VAL("&" + a$)
NEXT
CALL &8000
|HELLO
END
REM data follows...
DATA 01,0D,80,21,09,80,C3,D1
DATA 8C,00,00,00,00,12,80,C3
DATA 18,80,48,45,4C,4C,CF,00
DATA 21,25,80,7E,FE,00,C8,CD
DATA 5A,8B,23,18,F6,48,65,6C
DATA 6C,6F,20,53,65,78,79,00

```

You don't have to call this, it does that itself.

Now you suggested earlier that we have the same program written by two different people. I am sure that you didn't know about my split personality problem ..... Never mind, you do now! Have a good day, -Mike.>>



#### MIXED FEELINGS ABOUT EASTER

Dear Clive, It was with mixed feelings that I read in issue 56 you were considering using my calendar program in the Homegrown Library. Doubts set in. Had I got it right? Had I checked it thoroughly?.

I have been using the program for a number of years, never-the-less the doubts remained. My main concern was about the routine to establish Easter Sunday. So I decided to use the tables in the Common Prayer Book for a program to check if any discrepancy appeared over the 300 years covered by the Common Prayer Book and my original program. Sure enough the years 1954, 2049, 2106, differed. This being so and having decided that I could not dispute the Common Prayer Book, and for the good order of things, I enclose an amended version of the program using the new routine.

I offer my apology for mucking thee about. <<Don't worry, I make plenty of errors myself. From a personal point view, I'd much rather you found the error now. Score 2 million points for checking your own vork. -Clive.>>

Now for just a little moan. Two PD disc's ordered on the 18th May still haven't arrived. Reading other members' letters I know I'm not alone, but that's not a lot of compensation. I guess I'll have to be patient.

So that I'll have even more to look forward to, I enclose a cheque for The New Alternative Firmware Guide. I've also sent a cheque to Paul for another 6 months subscriptions. All the best.

Jack Butler  
Grays, Essex

<<Hello Jack. Clive says thanks for the amended program, it is being dealt with even as I write. Thanks from all of us for the cheques.

I have never been able to understand why Easter is such a movable feast. Why on earth, (or in heaven), does the damn date have to fly around the calendar like some demented thing? Christmas doesn't move, (at least it hasn't recently, as far as I can remember - you know what Christmas parties are like.) Can you imagine the chaos and confusion if just any old date could move around like that? How the Middle Easterners and Chinese go on with their New Years flitting around I really don't know. It strikes at the very heart of being British.

Anyway, Jack, congrats on getting it sorted. Not that I mind much, I don't plan on being around in 2049, (let alone 2106), and I wasn't here in 1954 - another two years to go. <<I was here in 1954 and I do plan to be around in 2049. After all, someone has to edit WACCI. -Clive.>>

We apologise profusely and sincerely for the delay. There have been one or two hiccups, which we hope are now sorted out. Remember God's last message to His creation..... "We apologise for any inconvenience. Normal service will be resumed as soon as possible." -Mike.>>

<<If you haven't received the discs by the time you read this, I'll panic and send the order out again. Please let me know of any problems, once we know about them, then we can do something about them. -Clive.>>

## ARE YOUR BITS MISSING?

Dear WACCI (or Mike). With this letter you should find a copy of the Brand Noo "WACCI Index Volume 3". I said I'd do it, and just for once....

Let me explain. Do you remember how you read in WACCI number something-or-other how to build an eprom blower out of an old telly and some sticky back plastic? <<No?>> And after spending half the night searching through approximately 2000 pages of old WACCI's you still can't find it?

The Brand Noo WACCI Index is the answer to all such problems. It lists in common or garden ASCII format all the things in WACCI that could possibly be interesting (and a fair number that can't be of any interest to anyone in their right mind).

To keep the size sensible, the number of cross-indexed items is minimal. Volume 3 covers issues 25 to 36. It is not profitable to enquire why I should start on Volume 3, except to say that I still need several back issues before I can do Volume 1 (issues 1-12). I have started work on Volume 2 (issues 13-24), which will be released in due course. Eventually I hope to cover all the issues, but as it takes over two hours to index every issue this is quite an undertaking.

It is primarily an index of contents rather than of titles or authors, as I felt that this would be the most useful. While most items in the 12 issues appear somewhere in the index, there are items which don't seem to have any content of interest and which therefore don't appear.

I'd like to hear members' comments on the usefulness of the index, (via Fair Comment, of course). If people feel that there are bits missing or extra features that would be beneficial then maybe we can organise a joint effort project to expand and improve the thing.

Stuart Gascoigne  
Bristol

<<Hi, Stuart. Glad to see you're still diddling. I think it's a good idea. What's a good idea? Did someone have an idea? Was it good? Will I be able to find my bits in the index? Does anyone care? Are your bits missing? I think some of my bits are missing, (possibly my marbles), do you know where they are? Are they in the index?

Blah, blah, burble, burble...Nurse, Nurse... Go to it Stuart. -Mike.>>

<<Sorry about that Stuart, we were warned by the hospital that there would be complications following Mike operation. However, we didn't expect such a dramatic increase in his IQ.

Thanks for the Index, it'll be on a homegrown (or Public Domain) disc very shortly. (It'll be on a disc by the time WACCI 58 is delivered. -Clive.>>



## MANUAL DEXTERITY (SELF ABUSE?)

Hi Mike. I'm glad to read in WACCI 56 that you're up and in the thick again. Not to say in the pink...

I sent Uncle a piece about the alternative Canon/IBM mode of the BJ-10ex, and in it I complained, as Bob Garbutt had before me, about the lousy Canon manual.

It really is so skimpy that in the end I wrote to Canon UK about it, and they sent me copies of the programmers' manuals for the BJ-10 and its Epson emulation. These are effectively two manuals, and they are fine, good and detailed, and what the customers' manual should have been in the first place.

I suspect that quite a few WACCIites will be getting one of the Canon bubble jets- they are really quite amazing value for money these days. In that case they might like to know that the person to write to is:-

Noel O'Reilly  
Tech Support Manager  
Text and Data Products  
Canon (UK) Ltd  
Canon House  
Manor Road  
Wallington  
SM6 0AJ

In my letter I emphasised the bad publicity that their inadequate manuals were giving the company, and pointed out that other manufacturers such as Hewlett Packard and NEC include in their customer manuals the same amount of info that Canon put in their programmer's manual. It might be

worth giving them a shove in that direction if anybody else writes to ask for a proper manual. Who knows, they may get the message?

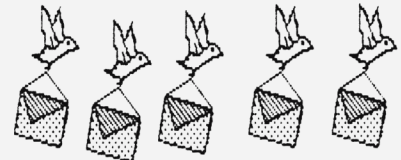
In the mean time, they are very nice and helpful :-

Peter Ceresole  
London

<<Cheers Peter. Thanks for the info. I can't help feeling that Neil O'Reilly is going to regret being famous.

I am unlikely to get one of these lovely, quiet beasties as I've just bought a new 24-pin printer, however anybody in the market for a superb printing machine really ought to give it a test drive.

What do you mean thick? Am I thick? I'm not as thick as I look, well, maybe I am, but so what. -Mike.>>



## BEWARE OF THE DOG!

Dear WACCI, I am the librarian of Gnasher PD and I would very much appreciate it if you would mention my library in the next issue of WACCI.

Matthew Parfitt  
Gnasher PD Librarian

<<Err I would and I have, but I don't think it'll do you much good. You haven't told me your address or how much PD costs from Gnasher. All I can say is Gnash, Gnip (read the Beano for a translation!) If anybody can give us more details then please do. -Clive.>>

**WACCI BB**

On-Line 24 hours per day,  
7 days per week,  
52 weeks of the year.

Phone: 0252 318557  
Speeds: 300, 1200 and 2400  
Format: 8, N, 1

v23 (12/75) available by request,  
phone Chris on 0252 24721 (voice.)

WACCI's own BB carries all the new public domain programs, help-line details and message area.

### MISSING DIP SWITCH?

Dear Clive, I will be grateful if you could put the following advert into next issue of WACCI. Thanking you very

#### WANTED : MX-80 PRINTER MANUAL

I need to beg, buy or borrow the printer manual for an Epson MX-80 line printer. I need to know the correct DIP switch settings. A photocopy of the relevant pages would be very helpful.

Please contact:

Peter Dooley  
17 Hall Drive, Greasby  
Wirral, L49 1RW  
051 667 3670

much, and congratulations on the re-launch of WACCI. Yours sincerely,

Peter Dooley  
Greasby

<<No sooner requested than done. One worthwhile tip (I used it quite often) is to phone the technical department and ask them for the correct settings. They will usually tell you (or fax you) the correct data. It has always worked when I've done it. -Clive.>>



### WATCH OUT, HE'S BACK

This is a, hopefully, elegant loader and setter-upper for the GOLDMARK 8-bit Printer port. The one given in the manual doesn't work with ROMDOS. It was apparently designed to work with Qualitas/Plus.

When I found out that it wouldn't work I set about trying to find a solution and eventually managed to re-locate the code. I rang GOLDMARK to tell them of my solution, but they didn't seem all that interested. So, for better or worse here are my efforts for all to see.

The problem with the original is that it overwrites ONE or TWO BYTES of the disc jump block. This routine moves the code to &8000, which is a fairly safe location.

### LISTING 1

```
10 MEMORY &7FFF
20 FOR x=&8000 TO &803F:READ d$:
   POKE x,VAL("&"+d$):NEXT
30 POKE &BDF2,0:POKE &BDF3,&80
40 POKE &BD31,&C3:POKE &BD32,&17:
   POKE &BD33,&80
50 POKE &BD2B,&C3:POKE &BD2C,0:
   POKE &BD2D,&80
60 DATA f3,c5,f5,01,32,00,3e,f5,
   db,69,17,17,30,0c,10,f6
70 DATA 0d,20,f3,f1,c1,b7,c9,f3,
   c5,f5,f1,01,01,ef,cb,7f
80 DATA 28,0e,e5,f5,af,26,08,ed,
   49,ed,79,25,20,f9,f1,e1
90 DATA e6,7f,ed,79,f6,80,ed,79,
   e6,7f,ed,79,c1,37,c9,00
```

The listing below locates the code as high as possible in memory. This also works in ROMDOS and leaves a bit more room for PROTEXT/PROMERGE+ users.

### LISTING 2

```
10 SYMBOL AFTER 256
15 MEMORY HIMEM-65
20 m=HIMEM+1
30 FOR x=m TO m+63:READ d$
   40 POKE x,VAL("&"+d$):NEXT
50 h=INT(m/256):l=m-h*256
60 POKE &BDF2,l:POKE &BDF3,h
70 POKE &BD31,&C3:POKE &BD32,l+&17
80 POKE &BD33,h
90 POKE &BD2B,&C3:POKE &BD2C,l
100 POKE &BD2D,h
110 DATA f3,c5,f5,01,32,00,3e,f5,
   db,69,17,17,30,0c,10,f6
120 DATA 0d,20,f3,f1,c1,b7,c9,f3,
   c5,f5,f1,01,01,ef,cb,7f
130 DATA 28,0e,e5,f5,af,26,08,ed,
   49,ed,79,25,20,f9,f1,e1
140 DATA e6,7f,ed,79,f6,80,ed,79,
   e6,7f,ed,79,c1,37,c9,00
```

Either of these loaders can be included in a longer listing to set up PROTEXT or whatever and, once run, can be discarded. If you reset your machine or switch off you will have to re-load it. Such is life!

Mike Lyons

<<Hiya Mike, Thanxs for the tip, it's amazing what you can get upto whilst recovering from an op. -Clive.>>

### A SAFE READ

Hi Clive and Hello. I need a simple easy to follow program that'll read a text file from disc and display it on the screen or a printer. Can anyone please help, thanks in advance.

John Williams  
Manchester (City not United)

<<Hi there John, your wish is 'our instruction that must be obeyed' so it's on with a simple text file reader program. Best Wishes -Clive.>>

### TEXT FILE READER

```
10 'Text file reader
20 'Clive Bellaby, August 92
30 '
40 'Opening Screen
50 '
60 MODE 2
70 PRINT"Text File Reader"
80 '
90 'Select file to print
100 '
110 CAT
120 INPUT"Select file";f$
130 '
140 'Select screen or printer
150 '
160 PRINT:PRINT
   170 PRINT"Show file on (S)screen"
   180 PRINT"or (P)printer"
   190 s$=UPPER$(INKEY$)
   200 IF s$="S" THEN w=0:GOTO 230
   210 IF s$="P" THEN w=8:GOTO 230
   220 GOTO 190
   230 PRINT:PRINT
   240 '
   250 'Get and display file
   260 '
   270 OPENIN f$
   280 WHILE NOT EOF
   290 LINE INPUT #9,a$
   300 PRINT #w,a$
   310 WEND
   320 CLOSEIN
```

### FINALLY IT'S UNCLE CLIVE

By the time you read this, all the PD orders should be up to date. If your order has not arrived safely at your house then please let me know.

I've been asked what ITMA and TTFN stand for, well I'm not telling, ask your parents or grandparents.

Clive Bellaby  
'Underneath the arches', Nottingham

# PROTYPE – THE RETURN OF ARNOR!

## Did you think Arnor had developed their last CPC product?

We must admit, it was starting to look that way. But now we are pleased to announce a stunning new arrival - *Protype*. This provides *Prottext* with the improved printing features that many of you have requested.

We honestly believe that it is not possible to achieve better quality output from a 9 pin printer than with *Protype*. Just look at the examples below - all printed on an elderly Amstrad DMP 2000!

*Protype* costs just £30 and is available on disc only. It works with *Prottext* ROM and disc versions and may also be used as a stand alone program.

5 years after its original release *Prottext* remains indisputably the leading CPC word processor. In the February 1991 issue, AMSTRAD ACTION said:

*"Without doubt the most complete word processor available for the CPC ... Prottext is very much a professional quality program."*

AMSTRAD ACTION speed tests show *Prottext* to be many times faster than other programs, for example:

Replace operation	Delete 17k block
Program A - 94 secs	Program A - 17 secs
Program B - 74 secs	Program B - 15 secs
<i>Prottext</i> - 5 secs	<i>Prottext</i> - 1 sec

### Prices

<i>Protype</i>	£30	(disc, <i>Prottext</i> not required)
<i>Prottext</i> + <i>Protype</i>	£45	(disc)
Rombo ROM box	£20	(when at least one ROM is purchased)

### ROM prices

<i>Prottext</i>	£25	Promerge Plus	£20
Maxam	£25	Utopia	£20
Prospell	£20	Maxam 1½	£20
		BCPL	£20

**Protype** is a typesetting print enhancer designed to squeeze maximum quality from low-cost 9 and 24-pin dot matrix printers. This paragraph shows how **Protype** can work to a right-hand margin.

Liquid<sup>293K</sup>

$c_p / J \text{ kg}^{-1} \text{ K}^{-1}$

① Acetic acid (C <sub>2</sub> H <sub>4</sub> O <sub>2</sub> )	1.96 × 10 <sup>3</sup>
② Acetone (C <sub>3</sub> H <sub>6</sub> O)	2.21 × 10 <sup>3</sup>
③ Water <sub>sea</sub> (H <sub>2</sub> O, salts)	3.90 × 10 <sup>3</sup>

supports over 40 European languages including:

Anglo-Saxon þ ð æ œ ā ē ī ō ū æ œ  
 Czech á č ď é ě í ň ó ř š ť ú ů ý ž  
 Latvian ā č ē ģ ī ķ ļ ņ š ū ž  
 Polish ą ć ę ł ń ó ś ź ż  
 Turkish á â ç ğ ı î ö ş ü

This paragraph shows how **Protype** can work to a right-hand margin.

**A** Ganga común, «*Pterocles alchata*», 38cm  
 ♀ con tres bandas en el pecho †  
 ♂ faja pectoral castaña ‡

**B** just some of the non-ASCII symbols:

« » „ “ ” ¡ ¢ £ ¤ ¥ ¦ § ¨ © ª « » ² ³ ´ µ ¶ · ¸ ¹ º » ¼ ½ ¾  
 ← → # ¢ ß ð Ð þ Þ ø Ø  
 å Å æ Æ œ Œ † ‡ † ‡ † ‡

←line graphics too→

This actual-size printout was produced in one operation on a 9-pin printer using Arnor's *Prottext* and *Protype*.

*Protype* (disc only) works on:

- Amstrad CPC6128 [+]
  - CPC664 & 64K expansion
  - CPC464 & 64K expansion & disc drive
- Uses less than 350 bytes of the main 64K.

### PROTYPE IS VERSATILE:

- multiple diacritics (accents) with any letter (è ñ ÿ Å)
- tabulates proportional text / micro-justifies spaces
- 240 DPI × 216 DPI resolution on a 9-pin printer!
- works with all 9-pin or 24-pin Epson-compatible printers
- use from *Prottext*, Basic or machine code
- includes the seven fonts used in this demonstration
- choice of character designs within a font (page or page)
- !xs) 7o 9nil o 7o 9nigomí 7orrim
- superscript, sub script, underline, **b** box, **e** encircle
- kerning (spacing of 'difficult' character pairs (AV))

Fæðér úre, þú þe eart on heofonum	(Old English)
Ár n-atheir, atá ar nèamh	(Irish Gaelic)
Fader vår som är i himmelen	(Swedish)
Svargayehi vāḍasiṭina apagē piyāṇeni	(Sinhalese)
Teve mūsų, kurs es danguje	(Lithuanian)
Pater noster, qui es in cælis	(Latin)

Releasing your micro's potential...



Arnor Ltd (AA), 611 Lincoln Road, Peterborough PE1 3HA. Tel: 0733 68909 (24 hr) Fax: 0733 67299

All prices include VAT, postage and packing. Credit card orders will be despatched by return of post. If paying by cheque please allow 10-14 days for delivery.

# VERY

# basic

Written by  
Alan Tilling

Letters to:-

Very Basic Basic  
65 Lawrence Rd  
Altrincham  
Cheshire  
WA14 4EL

Logical Operators - Are they the people you ask about phone numbers? Alan Tilling investigates ....

Hello everyone. Tis I.

A few days ago I got a letter from my reader, Mr. Anthes of Dorset who quite rightly took me to task for only considering CPC 6128s in the VbB column. Well this is not done from any thought that the 6128 is any better than any other computers in the CPC range - it's just that I only have a 6128. So while I know and avoid certain keywords that are not compatible with the earlier machines, I can only test things I write on my (sorry Melanie on my daughter's) 6128. I'm sorry but that is a fact of life

### THE VBB APPEAL

This brings me to an appeal on behalf of all the 464 and 664 members. Will somebody please write an article showing the differences and the ways around the difficulties thrown up by the certain keywords.

It need not be particularly long nor does it need to be written on disc (if it is on tape or hard copy send it to me and I will transcribe it).

If you can write one please do so and send it to Clive or if you're not too sure of how to go about it send it to me and I can give VbB over to it for a month or so or you can contact Clive (or me) for advice.

<<Hi there Alan, now that is a very good idea. An article (or a detailed mini-series) about the differences between the 464's, 664's and 6128's. Vive La difference! I am sure that it will be useful for members who want their programs to run correctly on all three of the CPC computers. -Clive.>>

### BACK TO BUSINESS

Right to business. For a change I thought I would waffle on about logical operators this time. Come back don't turn the page yet. please! Most dissertations on logic usually start off with a banal quotation from Tweedle-Dee or Tweedle-Dum. I'm not going to. I'm going to start with a banal quotation from me.

*"My dog has a tail. My cat has a tail, therefore my dog is a cat."*

Well I've got that over with and I must say I feel better for it.

### BUSINESS REVISITED

Have you ever thought what it is that makes a computer a computer? It's not that it can write nor has it the power to do complicated mathematics nor even the speed at which it can do these things but the power to make decisions. I'm sure you must have seen some code like:-

```
1000 INPUT "Another game?";ans$
1010 IF ans$="Y" THEN 10 ELSE END
```

The common logical operators are AND, OR, NOT and XOR. IF/THEN uses them within its own code as does WHILE/WEND and FOR/TO/NEXT and there are probably some others too. These keywords operate on "bytes" and bytes are the groups of bits that the computer uses all the time.

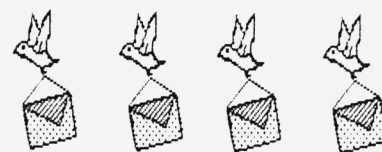
A bit can only have the value 0 or 1 and this can mean on or off. Rather like the lamppost outside the verdant grass lands of Trafalgar Terrace. If a

1 is presented to it, the surrounding area is bathed in a glorious saffron glow. If a 0 is present then it is daylight and the lamp is off. A two bit byte can be made up like this:-

00	(0)
01	(1)
10	(2)
11	(3)

Thus yielding the four different combinations. The denary (base 10) equivalents are in brackets next to each one.

If 7 bits are used no less than 128 combinations are possible. These can be used for any thing but a familiar use is at the printer port where the combinations represent an action for the printer to perform or a character to be printed.



*What are these birds doing on my page? Please explain! -Alan. I think that they are all migrating south for the winter season. -Clive.*

Think of the letter "A". Its code is 065 which in binary is 1000001. While the code for "a" is 097 or 1100001.

And "B" is 066 which is 1000010 and you may guess that "b" is 98 in real numbers or 1100010.

If an ASCII code table is consulted you'll find that the value of a lower case letter is always 32 greater than

the capital version of the same letter and 32 is represented by the presence of the 6th bit (from the right.)

#### GOING UP

In the past VbB has discussed UPPER\$ and LOWER\$. When say UPPER\$ is used, the computer doesn't need to look up what the letter is then look up the code for its capital version (or vice versa) and then change it. It only needs to set (or reset) bit number 6. This is the way that Basic listings are converted to upper case and the way that word processors convert between upper and lower case.

#### LOGICAL BIT PATTERNS?!

What has this to do with logic? Well let's have a look at the action of the logical operators upon bit patterns. For simplicity I'll use two bits but the same applies to larger groups.

#### LOGICAL OPERATORS - AND and OR

A B A and B

1	1	1	ie When A and B are
0	1	0	present, the result
1	0	0	is 1 and no other
0	0	0	combination gives 1.

A B A or B

1	1	1	ie When A or B is a 1,
0	1	1	then the output is
1	0	1	always a 1.
0	0	0	

Fig 2

The next operator (NOT) just says whatever the input is, the output is *always* the oppqsite. There is another operator called eXclusive OR (XOR) and its truth table is...

#### LOGICAL OPERATORS - XOR

A B A xor B

1	1	0	ie If either A or B
0	1	1	(but not A and B)
1	0	1	is a 1 the output
0	0	0	is a 1.

Fig 2

If we go back to the binary of the ASCII code for "A" it is 1000001. Now let's XOR 0100000 (the sixth bit) with it. We get...

```
1000001 = A conversely 1100001 = a
0100000 = 32           0100000 = 0
1100001 = a           1000001 = A
```

This process is known as bit masking and can be used for making all sorts of decisions such as "is the disc missing?" "Is the write hole open?"

"Is the pub open?" It is? Well that's a brief excursion into bit pattern logic, I'm off to this pub that the computer's discovered. Next time I talk about logic, I'll stick to logic as it is applied to variables.

Bye for now, Alan.

And of course you'll be thinking about the 464, 664 and 6128 compatibility question, so I'll be camped by my letter box waiting with baited breath for some answers.....

## COMPATIBILITY - A STARTING POINT

Uncle C writes again ... Off into the sunset with a *Hi-Ho Silver and away ...*

I've been having a think about Alan's (Mr Anthes) plea a for program that will run on all three CPC's. And like many other 6128 owners I have never considered the plight of 464 owners who have a slightly different version of Basic to contend with.

In my usual manner I sat down and thought about the problem and then I thought about the possible solutions and then I went to sleep 'cos I was very tired after a long days work.

#### SOLUTION NUMBER ONE

We could gather together all the RSXs that have been specially written over the past years to give compatibility between the three CPC computers into one large RSX program.

This super RSX program (for want of a better description) could then be used in all WACCI programs to avoid further problems.

#### SOLUTION NUMBER TWO

Some of the compatibility problems could be solved by using the control codes (ascii codes 0 - 31) to perform certain tasks. These were covered in depth by Norman Buxton's 'Follow the Country Code' series.

#### SOLUTION NUMBER THREE

Stop using the offending keywords! If that's practical? Is it? I don't own a 464 so I don't know all of the problems. However we have members who can tell us. The logical approach sometimes wins, after all; why solve a problem that needn't exist?

#### CLIVE'S FUNCTION

Many years ago, I was writing my 5's and 3's dominoes program I needed to change the Pen mode from Opaque to Transparent (*and back again*) using:

```
PEN 1,0 Opaque Printing
PEN 1,1 Transparent printing
```

Alas and alack, this did not work on the 464. Frustrated? I was indeed!

#### USER DEFINED FUNCTIONS

So I devised a simple user defined function that not only overcame the problem, it also provided a method of locating the cursor and selecting the pen number at the same time. And it worked quite quickly as well. So here goes:

```
10 'DEFINE CURSOR CONTROL FUNCTION
20 'C=Column,L=Line,P=Pen Colour,
25 'O=0(Opaque), 1(Transparent)
30 DEF FNC$(C,L,P,O)=CHR$(31)
    +CHR$(C)+CHR$(L)+CHR$(15)
    +CHR$(P)+CHR$(22)+CHR$(O)
40 '
50 MODE 1
60 PRINT,FNC$(1,1,1,0) "HELLO"
70 PRINT,FNC$(1,1,2,1) "-----"
80 PRINT,FNC$(1,4,1,1) "Done ..."
```

#### OUTRO

So there you have it, example number one. A simple to use alternative to a 6128 command, that allows all 464 users to enjoy the full potential of their machines. So all we need are your solution(s) to the problem(s).



# Inspiration

**George Ho-Yow converts Basic commands  
into machine code routines.**

## EXPLORATION INTO CPC6128 DISK-DRIVE OPERATION

*My pride and joy, an eleven-year old Escort XR3, failed its MOT. Rust had eaten a small hole through the floorpan. Isn't rust a costly nuisance? I could be wrong, but the only manner in which rust is put to any good use is in the manufacturing of cassette tapes and floppy discs. Some floppy discs look decidedly rusty, others look like being compounded of various metals.*

*Seriously now, I find exploring the operation of disc drives fascinating. Having got hold of a 3.5 inch drive recently, my enthusiasm for exploration knew no bounds. I was much elated when I managed to read the sectors on an IBM formatted disk. To write data back on the IBM disc requires much more work as management of the file directory is required. I haven't got that far as yet.*

### SWING THAT CAT

But first things first, don your pith helmets and join me into exciting journeys deep within AMSDOS routines. No longer will the whirr of your disk be just a whirr. You will marvel at the work AMSDOS does on your behalf when you type "CAT" on your keyboard for example. Some of you may have been on field trips already and know your way around disk hardware and DOS routines. I crave your indulgence while I explain the basics to the rest of WACCI readers.

### DRIVE THAT CAT

Looking at the drive unit, it has two motors complete with controlling electronics. One motor spins the disk round at a relatively fast rate so that the head virtually flies over the surface of the disc. The other motor steps the read/write head across the surface of the disk so that the head will remain over any one of a possible forty concentric rings or tracks, by virtue of the disc rotation.

There's a special point on the disk called the index mark. This is used by the controller as a reference point to locate the first sector on the track in question. You know how horses race around the track and you see them

flashing past those furlong posts. Well a disk track is divided into segments not furlongs. Each sector holds 512 bytes and there are nine sectors on a track. However AMSDOS writes up data to disk in datablocks of two-segment lumps, ie. 1024 bytes.

That's why a one-line BASIC program occupies a Kilobyte of data on a disc. A datablock is also called a cluster.

## OK, LET GET OUR FEET WET

Okay put on your scuba gear and let's format a disc to experiment with, so run DISCKIT3.COM under !CPM and select the function keys for data format. If you prefer you can use DISCKIT2 under CP/M 2.2 or your favourite formatting (disc, one for the use of) program.

Now that you have a blank disc, run your sector reader program to read Track zero, Sector zero on the blank disc. Not very exciting, all the bytes are set to &E5. As a matter of fact, if you read any sector on any track, you will find it to be completely filled with &E5. I will tell you about filler bytes later.

## ENTER THAT PROGRAM

Now type up a simple BASIC program and save it. Hang on, why not type up a prog that will be useful during these experiments. Just to make life easier

### PROGRAM TO CALCULATE THE TRACK AND SECTOR NUMBERS FOR A BLOCK

```
10 REM BLOCTRAC.BAS
11 REM a progette to convert a disc block no. to a track/sector pair.
12 REM For System format replace &C with &4 in lines 90 and 100.
13 REM
20 REM Written by George Ho-Yow, copyright (c) Feb 91, May 92.
21 REM All rights reserved.
30 MODE 2
40 PRINT: INPUT "Enter the block no pls. ",blk%
50 tracka=INT(blk%/4.5) : sectora=INT((2*blk%) MOD 9)+1
51 sectorb=sectora+1 : trackb=tracka
60 IF sectorb >9 THEN sectorb=1 : trackb=trackb+1
70 PRINT : PRINT "Block No. ";DEC$(blk%,"##");" (&";HEX$(blk%,2);") uses:"
80 PRINT "Track Sector"
90 PRINT tracka; SPACE$(5); "&C"; USING "#"; sectora
100 PRINT trackb; SPACE$(5); "&C"; USING "#"; sectorb
110 GOTO 40
```

Now save the prog as "BLOCTRAC.BAS"

Fig 1

I've written one specially for you, it's Fig 1 and it's at the bottom right hand side of page fifteen.

#### HOW'S THAT AGAIN?

This little program will tell you the pair of Track and Sectors associated with any given block number.

For example sectors one and two on track zero map to block zero. Sectors three and four, track zero map to block one, and so on.

Actually for a data formatted disc the tracks are identified in the range zero to forty. While the segments on each track are addressed in the range from &C1 to &C9.

For System formatted disc the segments range from &41 to &49, while IBM format ranges from 1 to 9.

I tried hacking into a games disc and found a mix of &F1 and &71 respectively for the start of segment address on either side of the disc.

#### ANOTHER NEW PROGRAM

If you don't have a sector reader program, you can type up the one shown in Fig 2. It may be a good idea to save it together with BLOCTRAC.BAS (again) on a different disc to the one formatted earlier. It is good practice to save type-ins before running them, then they wont be lost by a crash.

#### FILL THAT GAP WITH LOTS OF E5's

I promised to tell you about filler bytes. The nine segments allocated for data storage on a track are separated by gap markers and track/segment addresses. The controller does not like an empty unmagnetised segment, it would think a read failure has occurred. Hence the empty segments are filled with 512 bytes of value &E5.

By the way a sector consists of four records. Most disc operations that are available under AMSDOS are at sector level of operation though.

#### OUTRO

In the next article I will tell you about the disc directory organisation (it occupies Track zero, segments &C1 to &C4.) You may even figure this out yourself using the two progs from this article. Bye for now. May you find your Extended Disc Parameter Blocks where you expect them to be and the magic of RSXs Ctrl-A to Ctrl-H keep you entranced until we meet again.

#### A SIMPLE DISC TRACK AND SECTOR READING PROGRAM

```

10 REM READSECT.BAS
11 REM Copyright (c) 11/5/92, written by George Ho-Yow. All rights reserved.
20 REM for reading standard disc sectors. ie System format starting at &41,
30 REM data at &C1. A simple disc track/sector reading program.
40 REM padr% is the address of sector byte, followed by track,error and
41 REM buffer start-address in m/code prog.
50 MEMORY &3FFF
60 xsum=0 : n%=0 : p%=&4000 : chek=3035 : padr%=p%+&21
70 MODE 2
80 DATA 0E,07,CD,0F,B9,C5,21,24,40
90 DATA 3A,21,40,4F,3A,22,40,57
100 DATA 1E,00,CD,66,C6,DA,1C,40
110 DATA 32,23,40,C1,CD,18,B9
120 DATA C9,*
130 READ a$ : WHILE a$<> "*"
140 it%=VAL("&" + a$) : xsum=xsum+it% : POKE p%+n%,it% : n%=n%+1 : READ a$
150 WEND
160 IF xsum <> chek THEN PRINT "Error found in DATA" : STOP
170 INPUT "Enter a track number pls (0-39): ",track%
180 IF track% < 0 OR track% >39 THEN 170
190 INPUT "Enter a sector number pls (1-9): ",sector%
200 IF sector% <1 OR sector% > 9 THEN 190
210 INPUT "(D)ATA=&C1 or (S)YSTEM disc=&41: ",d$
220 IF d$="s" OR d$="S" THEN sector%=sector%+&40 ELSE sector%=&C0+sector%
230 POKE padr%,sector% : POKE padr%+1,track%
240 PRINT : PRINT "Track: ";track%; "Sector: ";HEX$(sector%,2):PRINT
250 CALL &4000
260 erx%=PEEK(padr%+2) : IF erx%<>0 THEN GOTO 261 ELSE GOTO 270
261 PRINT "Failed to read: ";erx%
262 PRINT "You may need to reset your CPC, press <ESC+SHIFT+CONTROL>"
263 GOTO 170
270 pstart=0: pend=255
280 GOSUB 350
290 PRINT:PRINT "Track: ";track%; "Sector: ";HEX$(sector%,2);
291 PRINT " Press <RETURN> More follows...."
300 INPUT "",c$
310 pstart=256 : pend=511
320 GOSUB 350
330 PRINT
340 GOTO 170
350 FOR x=pstart TO pend STEP 16
360 PRINT HEX$(x,3);": ";
370 FOR y=0 TO 15
380 byte=PEEK(padr%+3+x+y) : PRINT HEX$(byte,2);" "; : NEXT y : PRINT " ";
390 FOR z=0 TO 15
400 byte=PEEK(padr%+3+x+z)
401 IF byte<32 THEN PRINT CHR$(214); ELSE PRINT CHR$(byte);
410 NEXT z : PRINT
420 NEXT
430 RETURN

```

#### Please Note:

1. When trying out this program you should use an unimportant disc.
2. All Rom's should be switched off prior to running the program.
3. The program has been adapted slightly to fit the display box.

Fig 2

# THE EXPANSION SLOT

Steve Hammond dissects his mouse!

*After many months of being hounded night and day (and day and night) by uncle Clive and his merry posse I have finally agreed to write some technical articles for WACCI during the next few months. Within these articles I hope to demonstrate how an I/O (input/output) port can be used to allow the computer to do something, or even several, useful things.*

*Those of you who have failed (or hope to fail?) their GCSE in science need not worry too much, as I use the word 'technical' in the widest possible sense. You will be shown how to use the devices, and need not know the internal workings of the circuitry i.e. these will NOT be in depth lessons in electronics, unless these are specifically requested by club members. To support the articles for those of you who are not in possession of an Input/Output port, I will be able to supply the necessary hardware.*

## WHAT A T'DO

The articles will be based on the 8255 24 bit PIO (Programmable Peripheral Interface), to which can be added a variety of interfaces. The following is a list of devices which I am proposing to write about, and also supply where appropriate;-

- 1) LED displays
- 2) Analogue to digital converter
- 3) Digital to analogue converter
- 4) Temperature sensor
- 5) Switch output
- 6) An eeprom programmer
- 7) Motor drives

This is only the preliminary list, further additions being probable. The above units will be supplied in the form of modules which plug into the main 8255 unit, one at a time.

## WHO, WHAT, WHEN, WHERE AND WHY

Each module will demonstrate a certain principle in interfacing computers, relevant to most computers (not just the Amstrad CPC range) and allow you to experiment. I intend to write an article every couple of months (or so) and on alternate months to write a page dedicated to answering queries about the articles.

One question which I have noticed cropping up repeatedly in various magazines is 'how does a mouse work'. I thought that this might be a good

occasion to answer the question. You plug the mouse into the computer, switch the computer on and move the mouse around on its little mat; easy.

Of course, there is slightly more to it than that, and so that I can explain, give me a few minutes to take my mouse apart to get an idea of its workings and relay the information to you. Now, where's the screw-driver?

## SO THAT'S HOW IT ...

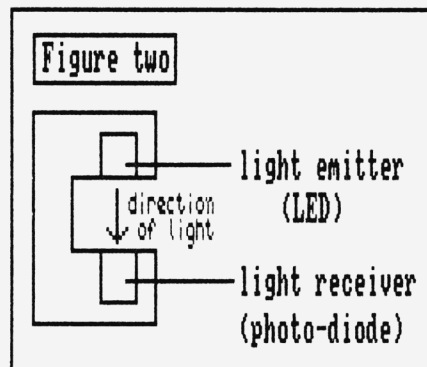
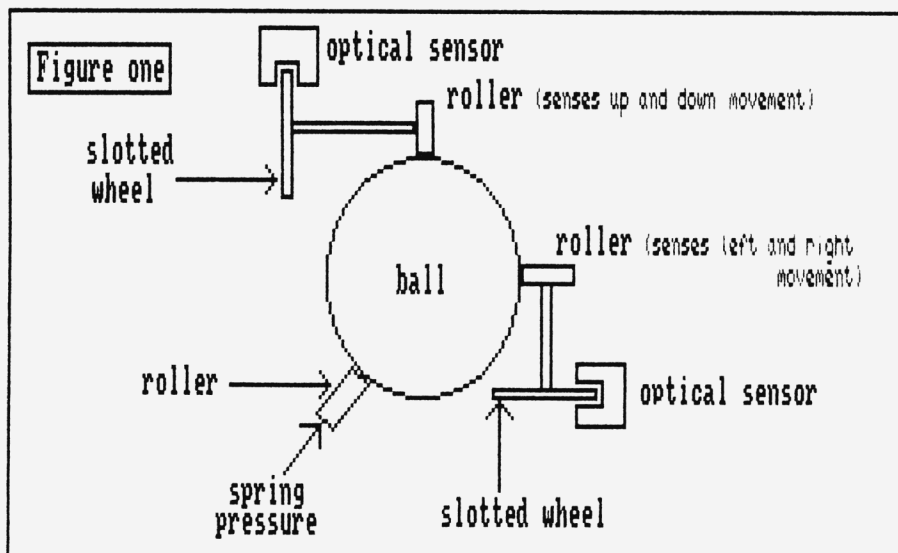
Right, it's now four hours later and I have sussed the workings of my mouse. The ball which you see at the bottom of the mouse (that's the one which can be removed for cleaning - what, you haven't cleaned yours since you bought it? Go and do it right now-and write

2000 lines, 'I must clean my mouse at least once a month.!) is held in place by three rollers.

One of these rollers is spring loaded, and its purpose is to hold the ball in contact with the other two rollers. The other two rollers are in line with the vertical and horizontal axis when looking down on the mouse (see figure one, which represents a view from above).

## ROLL THAT MOUSE

When the mouse is moved from left to right the roller on the right moves and the top roller stays still. If the mouse is moved from top to bottom only the top roller moves. Move the mouse diagonally and both rollers move.



Each of the two rollers are connected by a short shaft to a disc. But it is not just any old disc, these discs have small slots cut in their outer edges, about 30 or so, depending on the type of mouse (*black, white, short or long haired.*)



### SENSIBLE OPTICS

Each of the discs (one for each of the rollers) has two optical sensors through which they revolve, I've only shown one on the drawing for clarity. The sensors consist of a light source (an LED) and a light detector (photo-diode.) Normally when power is applied to the LED its light is arranged to fall upon the photodiode (see fig 2.)



### LIGHT THE WAY FORWARD

The light falling on the photo-diode causes it to give an output, which can be considered to be a logic '1'. If the light path is restricted, say, by putting something opaque in the slot of the optical sensor unit, then the output will fall, a logic '0'.

If we consider the discs rotating, as mentioned earlier, these have small slots cut in their outer edges. The result of moving the mouse is to move one (or both) of the rollers, which in turn revolves one of the slotted discs, which in turn causes light to fall on the photo-diode each time a slot in the disc passes through the sensor. The result will be a series of pulses as shown in figure 3 (the distance between the falling/rising edges represents a set amount of movement of the mouse, about a mm.)

As I previously mentioned, there are two photo-sensors on each disc, each sensor giving its own separate output,

labelled 'A' and 'B' in figure 3. If you look closely (not that close! Get your nose off the paper) you will see that each of the two outputs is 'out of phase', that is, when one output falls or rises, the other one does not do so immediately, but waits for a further 1/4 mm movement of the mouse.

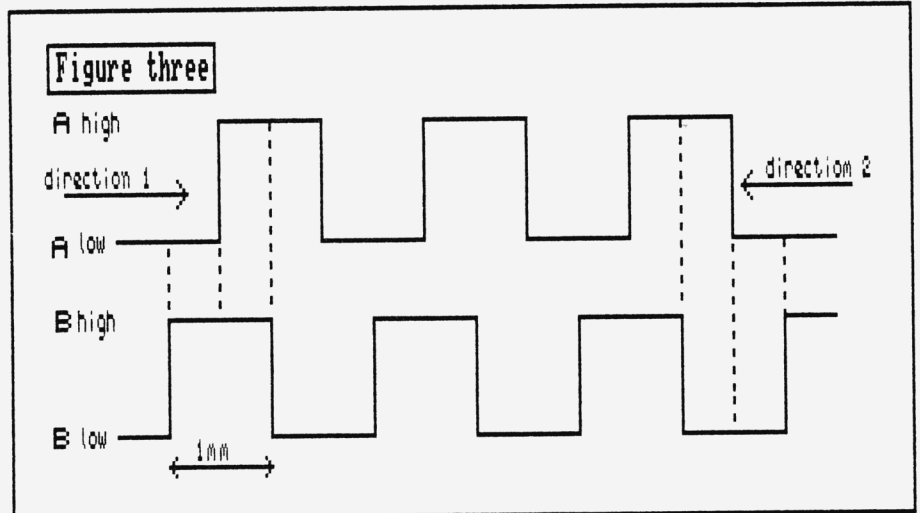
### A CHANGE OF STATE

The same happens when the other one changes state. This is an important concept, and it is the fact that the two waveforms are out of phase (by 90

degrees in fact) that allows the computer to detect which direction the mouse is moving in. This is why we have two sensors - you cannot detect the direction with only one sensor!

degrees in fact) that allows the computer to detect which direction the mouse is moving in. This is why we have two sensors - you cannot detect the direction with only one sensor!

I will leave you to check the rest of the possibilities, but basically, for any given transition of output 'A', the state of 'B' will be dependant on the direction the mouse



is travelling in (and vice versa.) The mouse interface takes the outputs from the mouse and is able to determine in which direction the mouse is moving, by using the method just explained. The interface is then able to output a series of pulses to the computer (sometimes the joystick port as with the CPC) and hardware/software in the computer takes over.



### RIDE THAT TRICKY WAVE

Now comes the really tricky bit, how do these two waveforms give us the information we need. Actually, it is quite simple. If you look at figure 3 again and consider the mouse moving in direction one. When wave form 'A' changes from low to high, wave form 'B' is already high, the dotted lines are there to help show this. In fact,

### OUTRO

Got a idea that you'd like covering, then drop Steve a line (c/o WACCI.) Time to put the mouse together, that's it. Oh dear, now where did this extra screw come from? Never mind, It must have been there before I started. I'll just try it again. *Oh no!*

\* Adverts \* \* Adverts \* \* Adverts \* \* Adverts \* \* Adverts \* \*

### AMSTRAD ACTION - NUMBERS 1 TO 64

FOR SALE: The first 48 issues of AA, in handsome red "AA approved" binders (The binders currently cost £5 each.) The whole set for only £30 plus post

and packing. "Free" with the above, issues 49 to 64 of AA. Contact:

Bob Greenhalgh, 2 Melbecks  
Braithwaite, Keswick, CA12 5TL  
Phone: 07687 78 527

SAMPLE ISSUE - SAMPLE ISSUE - SAMPLE  
Give your friends a treat! Send in a 34p stamp and their address and we'll send them a sample copy (issue 52) of WACCI. (If they want more, they can always take out a subscription.)

# FOREIGN LANGUAGES

John Hudson investigates.

*Although I cannot answer Pauline Russack's specific query in WACCI 56 - I suggest she contacts Peter Brunning for more information - her query prompted this quick tour through the foreign language capabilities of the CPCs and Pluses. There are four elements: keyboard, printer port, software and printer.*

## THE KEYBOARD

All machines come with a keyboard that is capable of producing the first 128 characters of the ASCII sequence directly. Producing any of the next 128 characters requires a degree of programming. The first 128 characters of the ASCII sequence (0-127) are virtually standard the world over; the next 128 (characters 128-255) come in many variations:- Amstrad's own set, IBM Sets 1 and 2 and Hewlett Packard's Roman-8 are all different.

Amstrad's set is given in the manuals and can be accessed in BASIC by using CHR\$(n) where n is any number between 128 and 255. It can also be accessed using machine code as it is held in ROM.

CP/M Plus expects a standard ASCII 7-bit keyboard, that is, one with 128 characters, but comes with two programs to reconfigure the keyboard to one of seven other languages - six foreign languages and UK English - and any number of keyboard arrangements.

## MIND YOUR LANGUAGE

CP/M's LANGUAGE.COM takes characters, including the pound sign, from the 128-255 sequence and overwrites certain characters in the standard 0-127 sequence so keeping within the 128 character total.

This allows the Amstrad to be sold in France, Germany, Spain, Italy, Denmark and Sweden as well as the USA and UK and appear to be a native speaker. The sequences followed by LANGUAGE.COM were developed by the ISO (International Standards Organisation) and are sometimes known as the ISO 7-bit languages. In the old days, around 1975'ish you had a maximum of 7-bits to work with.

## SET THOSE KEYS

SETKEYS.COM allows you to change the keys which will produce the 128 characters so that you can have a QWERTY, AZERTY or Dvorak keyboard if you wish. SETKEY is more versatile than LANGUAGE.COM

## PRINTER PORT

Whatever people may say about the Pluses, all the machines effectively come with a 7-bit printer port - the firmware in the Pluses has to be patched to make the 8-bit printer port work. This is however nothing like the limitation it may appear since, Brunword apart, there is no word processing software of which I am aware which actually needs an 8-bit printer port. The 8th bit is mostly used for graphics or desktop publishing applications.

Instead virtually all software and all printers get round the lack of an 8th bit by using a 7-bit command to set/reset the 8th bit before printing the next character.

## SOFTWARE

A programmer wanting to use all 8 bits for text has first of all to program a way of putting characters 128-255 on the screen - you cannot expect people to drop into CHR\$(n) every time (*well you can if they are foolish enough to buy a PC but that's another story.*)

The programmer then needs to find a way of sending these characters to the printer either as 8-bit characters or as 7-bit characters setting/resetting the 8th bit as necessary.

If the programmer uses the Amstrad character set they will either have to download that set to the printer or work out the correspondences with the

character sets which a printer is likely to have. Who was it who said the extra bit was worth having.

## WORD PROCESSORS

I've not yet found an 8-bit CP/M word processor, to my knowledge they don't exist. The nearest one gets is Newword which can print 8-bit characters on suitable printers. But Newword always displays the 7-bit equivalent of the character on screen. Instead, CP/M Plus comes with SETLST.COM which allows you to program your printer with the ISO 7-bit language which matches your LANGUAGE.COM setting.

The combination of LANGUAGE.COM and the appropriate 7-bit language on your printer means that you can run any CP/M program in any of the 8 languages available and have a printout that matches your screen display as long as you only use one language at a time.

## PRINTER

The standard Epson 9-pin contains no 8-bit characters; it uses characters 128-255 for italics. IBM produced two 8-bit character sets which are commonly available on 9-pin printers and which have no italics. Hewlett Packard have their own 8-bit standard (Roman-8) and enable italics in 8-bit character sets by having separate italic fonts. None of these 8-bit character sets match the Amstrad set so sending an Amstrad 8-bit character could produce italics or one of up to three different characters.

The only way to get the Amstrad 8-bit characters to print as they appear on screen is to download the Amstrad character set to a printer which can take downloaded characters - as all but the cheapest printers can now do. (*And of course all the daisy wheel based printers are stuck with whatever daisy wheel happens to be in the machine.*) This may be how Peter Brunning does it with Brunword since

he uses an 8-bit printer port which would not be needed if he had chosen the set/reset 8th bit approach. He may send all text as graphics data - Much easier with an 8-bit port. Virtually all printers come (like CP/M 3.1) with the standard ISO 7-bit languages, so printing Swedish, Spanish, Italian, German, Spanish, Danish and French is simple. Please ensure the computer and printer are set to the same language.

#### A PROBLEM OR TWO

There are only two problems. Firstly, the circumflex and the tilde are in the 0-127 sequence - so printing them requires a word-processor which can backspace to put them over the appropriate character.

Secondly, to mix languages, you need to tell the printer when to change from one language to another. Printers will do this, but not all word processors will do it or do it easily.

For example, VDE will only do it if the relevant codes are pre-installed in the program, whilst sending the necessary instructions to the printer using Mini-Office II takes up space in your text files. Problems problems!

#### CONCLUSIONS

The easiest way to take advantage of the foreign language capabilities of printers is to use the ISO 7-bit languages. Design a keyboard template using your word processor; then print it out seven times using ISO languages 1 to 7. Remember to switch off the printer before changing dip-switches.

If you use Mini-Office II or similar word processor, type the equivalent keys for the ISO language you are using. The screen may appear odd but the printout will be OK if you have set the printer correctly. If you are using a CP/M program, use LANGUAGE.COM to change the language on screen to match what will be printed.

#### FOREIGN LANGUAGES ONLY?

If you only want the foreign language characters in the Amstrad 8-bit set, then Brunword may be the most appropriate choice since this is the only way under Amsdos what appears on screen will be guaranteed to match what is printed. If you need to mix languages then Mini-Office II will work as well as, and in some respects better than, most CP/M word-processors

as long as you change languages between paragraphs and not in them. Supercalc2 and dBASE II can also be programmed to change languages in a similar fashion if required.

If you want to mix languages in the same line and use the circumflex and tilde, then you need a word processor which will accept escape sequences in mid-line and backspace without messing up the formatting.

If you want characters which are not available in the Amstrad set or in the ISO 7-bit languages - like the box drawing characters of the IBM sets or the circumflexed vowels in the Hewlett Packard sets, you will need a word-processor which can send true 8-bit characters and a functioning 8-bit printer port!

#### THE MORAL

The moral is: decide what you want first and choose the combination which will serve your needs best. If that is too difficult, buy a PCW and LocoScript 2. But I can assure you that using foreign languages is no easier on most other computers, with the exception of the PCW.



#### FEATURES INCLUDE:

- FULLY MENU DRIVEN
- EACH CHARACTER CAN BE MANIPULATED FOR INTERESTING SCREEN EFFECTS
- 6128+ compatible
- Textured fills
- Superb print quality

#### CAN IMPORT:

- ASCII TEXT FILES
- SCREEN FILES
- STOP PRESS FILES



LETTERING CAN BE TYPED IN FOUR DIFFERENT SIZES



This individual has just realised that he doesn't have a copy of MicroDesign Plus. Don't be like this poor unfortunate.

- 3" or 3.5" second drive access
- Over twenty different fonts included in the standard MD+ package
- 256k hi-res strip format

THIS ADVERT PRODUCED USING MicroDesign PLUS AND A 9 PIN PRINTER

AVAILABLE IN EITHER ROMDOS OR MSBDO FORMATS

**SPECIAL DISCOUNT PRICES FOR WACCI MEMBERS**

- MicroDesign PLUS - 11.99
- MicroDesign PLUS and original MicroDesign - 27.99

Cheques and P.O.'s to...



**CampurSoft**  
( 041 554 4735 )

16 SLATEFIELD ST , GLASGOW G31 1UA

... AND THERE'S MORE YET TO COME...

# COLOUR DUMP THREE

## Mike Lyons Reviews Colour Dump Three

*What is Colourdump 3? You mean you've never heard of it? It's a colour printer driver for the Amstrad CPC computer. You've got one of those haven't you? If you haven't then read on. You'll be as jealous as hell.*

### COLOUR COORDINATION

I didn't see Colourdump 2 because, at the time it came out, I only had a mono printer. However, most of the features of that program have been brought over to Colourdump 3 - or so I'm reliably informed.

The program disc comes with an A5, 12-page, laser-printed manual in a plastic dust-case @ la Protex, (the manual is put together using Protex). The explanations of what to do are clear and concise and there is even a section 'for the impatient'.

Colourdump will handle pictures from Advanced Art Studio, Normal screen pictures and some Multiface screens.

### BASIC COLOURS

Users are told on the very first page what the system requirements are: 6128+ users are catered for - sorry, but 464 users need not apply. Most colour printers with Epson or IBM emulation will run without problems. 24-pin users note that screens printed out in Standard, (Epson), mode will be longer than they should be, not shorter as stated in the manual. As you probably know 24-pin printers usually have a line feed of 1/180" in Standard mode and 1/216" in IBM mode.

My Star LC24-200 prints perfect size pictures in IBM mode, and elongated ones in Standard mode. IBM mode causes no problems with Colourdump.

### SLOW DRYING COLOURS

Be prepared to wait a while for your masterpiece to appear on paper. As the manual says, "Colour printing is not quick." This is not a criticism of the

program. It's just a fact of life. The print head may have to make up to four passes, (one for each ribbon colour), to print one line of the picture. Double density printing is even slower and a full size, double density print out may take an hour or more.

### ALL THE COLOURS OF THE RAINBOW

Colourdump will print in up to 16 colours in mode 0, made up from the four 'primary' colours on the ink ribbon - Black, Red, Blue and Yellow.

In mode 1 it will use only four shades. AAS users needn't concern themselves with this aspect of printing as the program will automatically load in a .PAL file which contains the mode and colour settings. In fact, AAS users are particularly well catered for by Colourdump as you don't even need to specify a file type and even compressed screens will be printed.

### CHROMATIC HARMONY

Colourdump does not conflict with any of my ROMs. I have all of the PROTEXT suite on ROM plus ROMDOS which have been known to cause difficulties in the past. Colourdump happily sits alongside these and will merrily load a picture from a large format B drive without a hitch.

So now, to business. After typing RUN"DISC you are presented with a pretty loading screen, (which, incidentally, you can print out from Colourdump), followed by the main menu. This gives you the choice of starting Colourdump proper or converting Multiface-d screens to a more 'normal' screen format. Having chosen Colourdump you are then asked a few questions on another menu.

Firstly, is the screen from Art Studio? We will answer "Y" to this. You are then asked for the filename, (no extension.) If the picture is on

drive B then include B:, (and or a user number), before the filename. If on 3" disc then swap discs when prompted and press a key. You are then asked for the size of print out you require. There are only two sizes, Large or Small. The large size more or less fills an A4 sheet, the small is about 13cm x 9cm, (5" x 3.5".)

### DEPTH OF COLOUR

Exact dimensions will vary depending on your printer. In Epson mode on a 24-pin printer the picture will be longer (by about 12%.) If you choose Large size you will also be offered the option of a double density print out which gives a more solid overall effect. All you have to do then is press [SPACE] to print out.

### COLOURING BY NUMBERS

Those of you who don't own Advanced Art Studio (AAS) will have to answer NO to the first question. From then on in you will have a slightly different selection of questions.

You are first asked which mode the picture is in, then you have to say if you wish to load previously saved inks. First time users should reply No to this. After selecting large or small size, you must input the colour numbers for the inks used. This means up to 16 in mode 0 or 4 in mode 1.

You can have a test print which will print out blocks of colour, indicates both the pen and ink numbers to give you an idea of the levels of shading.

Selection of the appropriate shades for each ink is done automatically by the program, and is usually close enough to the original to be completely satisfactory for most purposes. I rang MJC to get some more information before writing this article and they told me that Colourdump 2 had a routine to allow users to change the shading by

altering the individual amounts of the four colours assigned to each screen ink. This proved to be too much for some of our budding artists, (though when it was explained to me I found it quite easy and straightforward), and so it was decided to drop the routine altogether. Shame. It was a good idea and left room for experimentation.

If you make a mistake, don't worry. You can repeat your selections after entering all the colours. If or when you are finally satisfied with your selections you are asked if you wish to save the inks. If you don't have AAS you would be wise to build up a collection of ink files to save you a lot of hassles. Having gone through all of this you can then print, which is just the same as for AAS.

#### TWO FACED OR MULTIFAC(ET)ED

If you are one of those people who save screens captured by Multiface II take heart. You too are catered for. Choosing "B" from the first menu allows Multifaced screens to be loaded and then converted into 'normal' screen format. You are also told which inks have been used so that you can

make a note of them for when you eventually print them out using the normal screen routine. Some screens will not convert and the program will tell you this when you load the screen in for conversion. Otherwise, printing these converted screens is the same as for normal screens.

#### SHADES OF ENVY AND AVARICE

You'll have noticed that I haven't yet said anything about print quality. There are a couple of reasons for this. The quality of the print out is largely an attribute of the printer. Certainly, the variety of shades available is more than adequate to cope with 16 screen colours. The quality of my own artistic endeavours, (the print outs not the drawings), is very good, but then I'm using a fairly new 24-pin machine which has seen only moderate use and a new-ish ribbon. Older or more-used machines might not produce quite such good quality. I am certainly impressed with the lack of 'dotty-ness' in my print outs, and although they are certainly not of photographic quality they will do for me. My only regret is that I can't

show you - WACCI being a black and white magazine - but maybe, one day, Uncle Clive might get out a jubilee colour issue. Who knows?

#### FINAL COLOURS

Colourdump 3 is something I've been waiting for for centuries. (Just a slight exaggeration, folks). It's that one little thing which makes life with a 24-pin colour printer bearable and worthwhile. Colourdump 3 is one of those occasional pieces of software which you would like to have written.

Those of you who read my review of Probase+ may have noticed that I was not best pleased with it. The absolute opposite is true of this program. It's worth every penny of the £15.95 I paid for it. Even though it's billed as a 9-pin printer driver it works beautifully on my 24-pin Star printer with no problems at all.

#### FINISHED COLOUR

I recommend it to you, gentle reader, without reservations. In my totally unbiased view it's worth buying a colour printer just to be able to use this program. Mike Lyons.

## \*\* Competition Spot \*\* Competition Spot \*\* Competition Spot \*\*

#### HERE WE ARE AGAIN

We have been inundated with entries for last month's competitions - and we haven't reached the closing date yet! Perhaps we've found the type of compo you like, or perhaps you decided to escape from the Olympics. Who knows the secret of the competition box.

#### COMPETITION NUMBER TWO - WINNER(S)

For those with good memories, you'll remember, that all you had to do was design a front cover for WACCI to win a copy of MicroDesign plus (donated by Peter Campbell of Campursoft.) We ended up with three entries for the competition, each of which was very good (in my judgement), so we decided to award each of them a prize. This month's winner is:

Mark McIntyre, Bolton.

Remember, if you don't enter, you will not win. Best wishes and Good Luck.

#### COMPETITION NUMBER FIVE

Here we go again, what are we going to do for this competition? Hmmmm. Got it, if you want to win a quality prize of 3 PD discs of your choice from the WACCI library, then read carefully as I explain what you should do to win.

By now you'll have read 'Very basic Basic' (page 13) in which young Alan Tilling writes about compatibility problems between 464s, 664s & 6128's.

You'll have also seen my bit, where I go on about one of the methods I use to overcome this problem - To win this month's star prize send in:

'Your favourite program, routine, hint or tip that overcomes one of the compatibility problems'

Send your entry to WACCI (the address is on the top of the Who's Who page.) All entries to reach here by the end of September 1992. So if you want to win you'd better enter ..... now!

#### COMPETITION NUMBER SIX

Once again we have two competitions for you to enter. One of them should suit you. The super star prize remains the same, another three discs of your choice from the WACCI disc library. Homegrown or PD, there's over 60 to choose from. So here's the questions.

1. A plane crashes right on the border of Mexico and the USA. In which country do they bury the survivors?
2. A frog lies dead in the centre of a pond. The pond has a diameter of eight feet. A frog can only jump 3 feet. How can it get out?
3. How many accountants does it take to wall paper a room?

Send your entry to WACCI, all entries to reach here by the end of September 1992. So if you want to win you had better enter ..... now!

# TREADING THE BAUDS



BY **GEOFF HOLMES**

*You may recall the story where the Phoenix arises from the ashes as a new resplendent creature. Well after my swan song, I thought I'd rise from the mire of comms for one final fling on how to make a start on Comms. So stand clear in case you get covered in baud-rates, bits and parity.*

## THE ESSENTIAL INTERFACE

First of all I would recommend that you get hold of the Amstrad/Pace RS232 Interface unit. It comes complete with software on an inbuilt ROM. (You don't need a Rombox.) It's all right for messages, but the file transfer only covers XMODEM. However it will do for starting off. The TERMS04B software is much better.

The RS232 is an international standard, which means that with the unit attached to your CPC, your machine can exchange data with any other machine which has an RS232 port as well. This means you can access files on an IBM clone or Amiga for that matter. You only need a null modem cable to link the two machines. Of course both machines must be running comms software to support the file access and transfer.

Some older printers only had serial ports; no problem with these now that you have the RS232 unit. So all in all the RS232 opens a much wider scope for exploration (well beyond the original limited confines of your CPC.)

## THE MODEM

The next piece of gear is the Modem. I would recommend the Amstrad SM2400 external (standalone) modem. There are complaints that the bottom of the case runs hot. So of late, I have been using it upside down, on the basis that heat rises. I wouldn't want to overcook my chips now. It took me some time to read the manuals and figure out what to do. Especially since the modem uses Hayes Commands. Don't be put off by this, once you get familiar

with the essential commands it's a piece of cake. Like learning to ride a bike, difficult at first.

Other comms enthusiasts swear by Miracom modems, but the SM2400 offers V23 protocol over the Miracom. Though V23 isn't used a lot nowadays. It's like Oracle or Teletext in the way it is displayed as pages on your screen. The other type of BB is the scrolling ones which present data as lines of text which roll off the top of the screen. ANSI emulation is also popular on BBs. This provide cursor control so that graphical characters can be manoeuvred on your screen. Some cute pictures can be drawn on your screen.

## JOIN UP

Sorry I digressed, I will stick to the scenario of you having got the RS232 unit and modem. Now connect the RS232 to the expansion port or floppy-disc port as the case may be (depending on whether you have a 6128 or 464.) The modem connects to the RS232 and the plug goes into the telephone socket.

Your telephone also plugs into the modem for normal use when the modem is off-line. Don't forget to put a 3-Amp fuse in the plug if you're using a 3-pin plug for the power adaptor serving the modem.

## CROSS FINGERS, SWITCH ON

Now switch on and you should see a few additional lines to the usual power-on banner. These are: "COMMSTAR (C) 1986 HONEYSOFT LTD. Basic Ready." If you don't see this, switch off at once. Check that the cabling is correct. The arrow on the ribbon-cable connector

## THE ESSENTIAL SHOPPING LIST

1. RS232 Serial Interface. A used Amstrad/Pace RS232 will cost about £25, whilst a new RS232 costs around £60.
2. External Modem. The faster the modem the lower the bill. An old V21/23 modem costs about £30 (used), whilst a new fast V21/V22/V22bis modem will be nearer the £200 mark. Shop around for a bargain.
3. Phone socket - If there's not one nearby, you can install an extension for a few pounds. Do not ask Telecom unless you're very rich.
4. Software - The best PD software is on WACCI PD DISC EIGHT. ZMP, TERMS04B and more for only £3.

should be pointing up for the RS232 unit. (If you have checked all the connections and you still don't get a signing-on message then open up the RS232 interface and check if there's a COMMSTAR Rom in there - Many CPC comms users removed the Rom because it was a naff program and they didn't need it.)

## IT'S A SET UP

The next step is to set up the parameters in the RS232 unit. At the Basic prompt, type in !HT and press the Return key. The screen will clear and a status line will appear at the bottom. Now press the Control and f1 keys down at the same time. A window, RS232:, will appear on your screen with a tick against "TX Baud = 300."

Then press the Return key and another window titled "Rate:" will appear, with a tick against 300. Use the down-arrow key to move the tick to 2400 and press Return key. The second window disappears and the first window shows TX baud= 2400. Use the down-arrow key to move the tick to Par Check ON. Press the Return key to toggle this to Par Check OFF. Press the ESC key to clear the window and return to terminal mode. The RS232 is now set up for V22bis, 8N1. This in comms parlance means 2400 baud duplex, eight bits wide data, no parity and one stop bit.

#### GET IT RIGHT

OKAY, now set up the modem. Type in ATZ and press the Return key. If you see OK printed on the screen, you're laughing. Confirm that the modem is set correctly by entering AT12. Ermm don't type the full-stop. You should see "V22bis, 2400 Orig Format: 8-N-1 OK." Else type in ATB5 and check again with AT12.

#### DON'T CALL ME

Now for that nail-biting moment when you are about to make the very first call. You can try WACCI BB if you are in the South or Red Rose BB if you're more North of England (South of

Scotland or East of Ireland.) Okay, let's try the Red Rose in Preston. The Red Rose is run by Tony Walker well known to WACCI readers. If you are served by a digital exchange, then type in ATDT0772652212 and Return key. If you are still on pulse dialling use the prefix ATDP instead of ATDT, no harm will be done if you use the wrong one. After some three rings, you will hear a click followed by raucous noises as the modems establish themselves. Then another click and text start to appear on your screen. Now with Tony Walker's BB, you will be asked to send Escape twice. This is done by pressing the CONTROL and [ keys down simultaneously, twice.

#### YOU'RE IN - NOW WHAT

The BB software will be loaded. A banner will appear leading up to "Enter your name: " The BB will wait for you to enter your name followed by Return key. It will then ask you for a password. Now compose one of your own and for heaven's sake write it down carefully somewhere safe as you will need it for next time you try to log on. The BB won't recognise you and you will have to answer the questionnaire to get registered on the BB. All this ensures that no unauthorised users are allowed to mess up the BB system(s).

#### WACCI BB

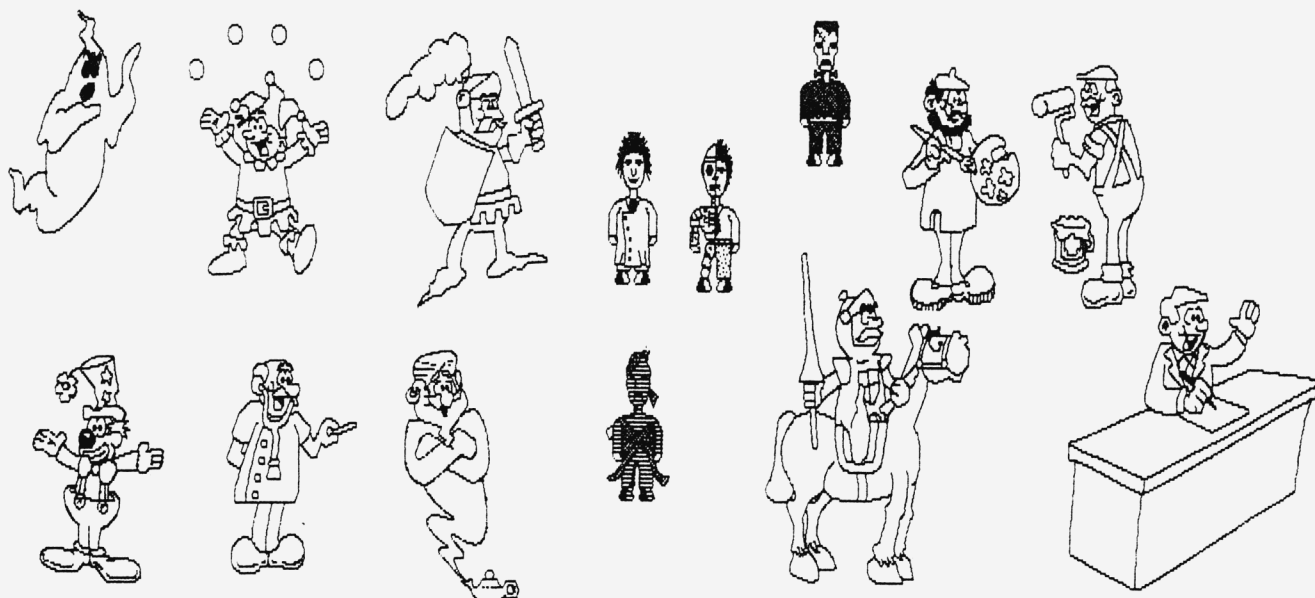
The other BB in the South is run by Chris Smith and it's principally for WACCI members. Type ATDT0252318557 <Return> for Chris's BB. There's no need for the escape chars this time. If you get the engaged tone, press the Return key to stop the modem and you will be returned to terminal mode. Try the ATDT sequence again if you wish.

#### PRACTICE MAKES PERFECT

If you want to practise without calling a BB, then enter the following strings. Note press Return key at the end of each string: ATSI8=120 this set two minutes of loop-back. AT&T1 to start the test.

Useful for testing a new piece of software and familiarization. After the two minutes the modem will drop back into command mode and you can continue as normal. Before I finally say adios, there's the business of saving your RS232 parameters to disc. Else you would have to go through the rigmarole of setting up the baud rate each time you power on your machine. Use the sequence Control-f2, Save, Configuration, <file-name> to achieve this. Consult the RS232 manual if you're puzzled by this. That's it folks, all the best wishes for fun in the world of comms. Byeeeeeee .....

## Now Available - MicroDesign Picture and Clip Art Discs



There are now 11 discs full of MicroDesign pictures and clip art in the library - and they only cost £ 3.00 per disc

---

# THE GREEN GREEN GRASS OF PROGRAMMING

## PAT LOVE TAKES A LOOK AT COMPUTER BASICS

*So, you're not content with putting your feet up and falling asleep in front of the television. You want to have a go at writing programs for your computer? But you don't know where to start. Is this a description of you!*

### YOU'RE THE BEST

I have a feeling that I am running the risk of preaching to the converted in writing about programming. Especially since I plan to start at grass-roots level. With WACCI being a magazine for the keen enthusiast, I suspect that many of you are well "genned up."

Well if you are a programming wizard then perhaps you be able to offer some constructive criticism or some general helpful advice after reading this article. That's what a club is for isn't it? Participation! Not sitting back and having a bad, indifferent or a good to very good read.

### ANCIENT HISTORY

I first became involved with Computers some twenty years ago. I can still recall the excitement at the prospect of working with the then forefront of technology. Part of my work involved writing a few diagnostic programs. As well as applying an occasional kick in the right place to fix the Computer. The programs were generally small in size and written in machine code.

After a lot of practice, several of us were quite adept at keying in small programs by hand.

### IMPRESSIVE WORK

Apparently it was fairly impressive to onlookers who saw our fingers tapping a few key-switches and with a flourishing sweep, clear the remaining keys, again and again so as to key in the program manually. There was a

paper tape reader to take in compiled programs. Hope I'm not boring you, recounting old stories.

It is this approach that I feel would be of much help to a newcomer to programming. Ie, making a start by understanding the fundamentals of the computer Hardware. Well the basics of the Z80 chip operation at least.

### BETTER BY DESIGN?

You must bear in mind that Computers are designed by humans for humans. A computer is a reflection of our brain moulded into silicon chips.

Just as our thoughts and ideas use the brain as a vessel, so does your computer program use the hardware components of the computer. Perhaps you haven't given much thought to the matter, but you, yes you, are more powerful in overall ability than any super computer, or assembly of super computers for that matter.

Okay, so the computer may calculate a hundred numbers faster than you, it may even correct your spelling mistakes. But can it do a millionth of the things you do overall on the whole? I doubt it.

### THE BASIC BITS

Right, let's look at the bits that make up a computer in a generalised fashion. Most if not all computers will have:

- 1) Data Storage also called Memory.
- 2) Input/Output access.
- 3) Arithmetic and Logic Unit (ALU.)
- 4) Operating System (OS.)
- 5) Power supplies.
- 6) VDU and keyboard.

I won't delve into the full details now. Not all of these are relevant to

programming skill. I will restrict the discussion to Memory, Input and Output devices, ALU and the operating system.

### DATA STORAGE (MEMORY)

Data storage is held in Random Access Memory (RAM). In the CPC it is 8-bits wide. The contents of RAM can be set or read by program commands. We will look at this later.

### INPUT/OUTPUT DEVICES

You need to communicate with your computer, hence the Input/Output access. These covers such things as keyboards, printers, tape and disc drives, and much more

### ARITHMETIC AND LOGIC UNIT (ALU)

The ALU speaks for itself, this is the heart of the computer used for performing calculations and also for logic functions. The OS provides control of the activity in your Computer. It is a collection of machine-coded routines that are needed to communicate with your keyboard or write to screen for example.

### OPERATING SYSTEM (OS)

The OS consists of two sections: AMSDOS to handle disc activities and AMBIOS the Basic Input/Output System. Basic here is not the same as BASIC in the well know language for us beginners. The built-in routines that make up the OS are stored in ROM chips. ROM is an acronym for Read Only Memory. (*Whereas Ron is the chap who lives next door to me.*)

The BASIC interpreter is also stored in ROM. This is quite sensible as you wouldn't want to change anything in OS or BASIC accidentally. ROMs are fairly robust as a rule. It's quite difficult to accidentally damage a Rom.

---

There is a lower level of machine control inherent in the Computer, which does internal housekeeping and such things. But I won't confuse you with that. After all this is going to be a series on software techniques

starting at a grass-root level. Looking forward to seeing you in my next article, which will be elaborating on the first item in the preceding list, ie., Data Storage and the relevant Z80 commands.

Before I go, you wouldn't know who left a bag of smelly organic horse s\*\*\*, ermm, manure at my front door, would you? A note attached read, "This should help to make your hybrid programs bloom. XX". Byeeee.....

---

## \* Adverts \* \* Adverts \* \* Adverts \* \* Adverts \* \* Adverts \*

### THE NEW ALTERNATIVE FIRMWARE GUIDE

Here at WACCI we have long mourned the passing of the good old Soft968, known to many as the Firmware Guide. Finally there's a worthwhile alternative that that's almost as good.....

You get 80 full A4 pages, in a slide binder with card covers. The pages are crammed full of Z80 instructions, all the standard firmware jumpblocks, maths routines, the full set of CPC memory maps, output port addresses, 464-6128 conversion addresses, Bios and Amsdos calls and much more.....

You also get a 3 inch that's been crammed with useful machine codes routines (and includes a monitor and machine code assembler.)

This is what you have been waiting for..... Written by Thomas Defoe (who used to run Print-Out) and Bob Taylor, this great new CPC product can easily be yours..... It's not £30, it's not even £20, It won't cost cost a tenner, no it's yours for only:

£7.95 including p&p (and the disc)

Got a 464? Don't panic, there's a tape version. Once you've purchased the new firmware guide and disc you can borrow the tape from the tape library.

### MASTERFILE II

The CPC database by Campbell Systems, originally sold for £29.95. WACCI has an unused copy, donated by a club member for sale at £15 inc p&p. Send your order to WACCI.

PCW 9512 Printer Ribbons, Ref 2476MS, £2.00 each including p&p. We have 12 in stock. Send your orders to WACCI.

### 2 IN 1

Two into one will go with this super PC to CPC file transfer program. You can easily transfer files between CPC and MS-DOS discs. The program has been selling for £25 to £30, however, to club members only, the price is only £20 inc p&p.

These are brand new copies of the program, purchased by WACCI directly from the suppliers to keep the price down. A complete review of the program will be in WACCI very shortly.

### BLANK 3 INCH DISCS

Only £14.80 per 10 inc p&p. These are quality branded discs (usually Maxel.)

This is probably the cheapest price anywhere in the world today. This offer is available to WACCI members only. Send your order to WACCI. 7/10 days delivery. The discs are sent out in their original boxes so you'll need to be in when they arrive or be prepared for a trip down to the post office to collect them.

If this is a problem, then let us know and we'll despatch them in two jiffy bags. (Size 9 by 6 inches.) We offer this as a special service 'cos of the extra costs involved.

CATCH23, Shoot em up, disc, £3 inc p&p

CALIFORNIA GAMES, disc, £3 inc p&p.

CHARLIE CHAPLIN, US Gold, create your own animated film, disc, £3 inc p&p.

STAR WARS, tape, £3 inc p&p.

### LOOSE 3 INCH DISCS

Do you need some new 3 inch discs, but don't want to spend £14.80 buying ten? Then have no fear, we are here. We've a supply of new 3 inch discs from Magtron. These are good quality 3 inch disc (similar to the old Panasonic discs.) The discs are uncased (no plastic or paper sleeves) and cost £1.50 each. (includes p&p.)

They are supplied with a plain white label. We at WACCI have tried a batch and they work Okay.

There's a minimum order quantity of two discs (to keep postal costs down) and they are dispatched in Jiffy bags, so you will get a free Jiffy bag as well (worth at least 20p).

Why not make a friend happy, give them a year's subscription for WACCI, the extra-special present they have always wanted. Hours of happy reading for all the family. Only £18 for 12 issues.

MINI OFFICE II, tape, only £3 inc p&p

This could be your last chance to buy one of the early greats of Amstrad programming. It's old fashioned, it's probably useless, but it's also a CPC great. Get it today.

CHESS (COLOSSUS 4), disc, £4 inc p&p.

DRILLER, tape, £3 inc p&p.

CAPTAIN BLOOD, tape, £3 inc p&p.

STORMLORD, tape, £3 inc p&p.

---

Send your orders to: WACCI, 12 Trafalgar Terrace, Long Eaton, Nottingham, NG10 1GP (please make cheques payable to WACCI)

---

---

# SQUARE ROOTS



# AFTER ALBERT

TOM BETTS TAKES A LOOK AT SQUARE ROOTS AND ALBERT'S TOMATOES

*Remember Albert of the Pyramids? He was not good at sums. But he could make a one to one relationship using tomatoes. Not many of our readers were good enough at sums to work out the sizes of the pyramids in our tomato pyramids puzzle.*

## CPC FAILS MATHS TEST LATEST

Neither is the CPC all that hot when it comes to sums. Its arithmetic is limited: try asking it: what is 98765 multiplied by 54321? Its arithmetic is also inaccurate. This following little program is a paraphrase, if that is the word, of an early program I used for looking after the expenditure accounts of our household. Try it.

```
10 credit = 10.00 : debit = 10.00
20 spent = 1.99 : refund = 1.99
30 debit = debit + spent + refund
40 PRINT credit,debit
50 If credit<>debit THEN PRINT
   "Unbalance"
```

Now you know why I'm a poor man. Or try this:

```
PRINT INT(SQR(4900))
```

Your CPC will tell you the answer is 69. As readers of WACCI's pyramid puzzle might know, Albert knew more about 4900 than that.

## NEWTON BLAMED - APPLE FALLS ON HEAD

There is a book, a mathematics primer coming from the Faculty of Mathematics of a certain university, which says that the square root of three cannot be evaluated without a calculator. To be fair to that university, it does elsewhere use the Newtonian method of finding a square root. I choose to use the word "finding" because that method does just that. It guesses a number, then squares it to see if it's right.

If it's wrong, it makes a more intelligent guess and tries again, and again: well suited to computers, but old poor Isaac!

## HISTORY REVISITED

When I was at school, ta-ra, we *calculated* square roots. I don't remember that we were ever told if the method we used had a name, and so, for the purposes of this article I have been trying to find out if it has. I have asked younger generations, without success. My local library has a shelf full of mathematics books. None of them has helped. None of them describes ANY method of finding square roots. All assume calculator use.

## SCI-FI OR SCI-FACT

I'm reminded of an old science fiction story, so old that it was published in a sci-fi magazine at a time when readers of those magazines, fearful of being cast out by society, would wrap their magazines in brown paper covers lest they be detected. The story told of a future war where each side's calculating machines were being knocked out by the opposing forces. One side discovered a long lost space colony whose people had not forgotten arithmetic methods. The war was over.

## A WAY FORWARD

I have said it before: it's pleasing to get an idea for a new program to write. Here was an idea: "Calculate Square Roots. Teach It Yourself". Well I've done that, written it I mean. It works well but the presentation needs polishing. That program prompted the idea of writing a program to find square roots of numbers bigger than the CPC can handle. That seemed to work, but I didn't know if it got the answers right. So I had to write another program to multiply big numbers. That program needed a program

to add big numbers, and that combined program meant that I could modify the square root program to deal with even bigger numbers. That new program uses the Add Big Numbers, but it also needs to subtract big numbers: another program. I'll not get that done before my holiday. All is going well.

## OH NO, FOILED AGAIN

No. All is not well. I have just made another visit to my local library and found, on the shelves for returned books, a book for advanced students. It says that if you have no calculator, the only other ways to find a square root are to consult tables of squares or construct a graph. I am beginning to think I must be a member of that lost colony.

If there are any warring hordes out there who have had their calculating machines destroyed I could be tempted to supply the Teach It Yourself disc at an appropriate mercenary fee.

The Teach It Yourself program inputs a number from the student, calculates its square root, explaining and demonstrating each step (much as a teacher would) as it goes. There will be more to follow if you think you want to know more, when I have made the programs more secure. They have no error checking, and no friendliness. They also need some added polish.

We're off to the seaside!

## IF YOU HAVEN'T READ ABOUT ALBERT.

Albert featured in a recent WACCI prize competition. Briefly, the puzzle included the problems of firstly, finding the number 4900, then finding that largest square number of tomatoes which would build, exactly, into two square pyramids, each of which had fewer than 4900 tomatoes. The two pyramids need not each be the same size. Read WACCI 54 for more details.

**\* FSW \* The WACCI Public Domain Software Library \* FSW \***

All the programs in this library have been fully tested on an Amstrad 6128. The programs are supplied on an as-is basis. Please advise WACCI of any problems, we will do our best to rectify the problem and provide any assistance you need.

**PUBLIC DOMAIN DISC 1 - CP/M 2.2 ONLY**

Forth Programming Disc: Forth & intro to the language.

**PUBLIC DOMAIN DISC 2 - CP/M 2.2 and CP/M 3.1 (plus)**

Utilities: NSWP, Print, BD04, Rasmb, Zmac, Zlink & more.

**PUBLIC DOMAIN DISC 3 - CP/M 2.2 and CP/M 3.1 (plus)**

MBasic Programming Disc: MBasic, Compiler, Instructions etc

**PUBLIC DOMAIN DISC 4 - Amsdos (128k CPC's only)**

Includes: PD Planner, Powerpage, Rambase3 & Ramdisc.

**PUBLIC DOMAIN DISC 5 - CP/M 2.2 and CP/M 3.1 (plus)**

CP/M Games & Adventures. (Base, Island, Colossal Caves etc)

**PUBLIC DOMAIN DISC 6 - Amsdos**

Games Disc One: 37 CPC games (inc. Splat, Hangman & more)

**PUBLIC DOMAIN DISC 7 - CP/M 3.1 (plus) ONLY**

Utilities: Superzap, Form3, Crunch/Uncr, Andybase & more.

**PUBLIC DOMAIN DISC 8 - Amsdos and CP/M 3.1 (plus)**

Comms disc: contains, ZMP, TERM5048 and loads of help files.

**PUBLIC DOMAIN DISC 9 - CP/M 2.2 and CP/M 3.1 (plus)**

CP/M Utilities: LT29, Nulu15, Unzip, MFT, Rescue, and more.

**PUBLIC DOMAIN DISC 10 - CP/M and Amsdos**

Word processor (VDE266) and spell checker (ISPELL.)

**PUBLIC DOMAIN DISC 11 - Amsdos**

Adventures Disc 1. Two full adventures & Eschers crazy mill.

**PUBLIC DOMAIN DISC 12 - CP/M 2.2 and CP/M 3.1 (plus)**

COBOL Programming Disc: Compiler, Series and Examples.

**PUBLIC DOMAIN DISC 13 - Amsdos**

Demo's Disc 1. Loads of graphically superb demo programs.

**PUBLIC DOMAIN DISC 14 - Amsdos**

David Carter's Amiga Graphics Disc One (49 super pictures.)

**PUBLIC DOMAIN DISC 15 - Amsdos**

'Flags of the World' and David Carter's 'Animator Demo'.

**PUBLIC DOMAIN DISC 16 - CP/M 2.2 & 3.1 (plus)**

Programming Languages: PPC Pascal and ZBasic (demo version.)

**PUBLIC DOMAIN DISC 17 - CP/M 3.1 only**

JRT Pascal Programming Disc: (Disc 1 of a 2 disc set.)

**PUBLIC DOMAIN DISC 18 - CP/M 3.1 only**

JRT Pascal Programming Disc: (Disc 2 of a 2 disc set.)

**PUBLIC DOMAIN DISC 19 - Amsdos**

Lots of MicroDesign format pictures and clip art.

**PUBLIC DOMAIN DISC 20 - Amsdos**

More MicroDesign format pictures and clip art.

**PUBLIC DOMAIN DISC 21 - Amsdos**

Even more MicroDesign format pictures and clip art.

**PUBLIC DOMAIN DISC 22 - Amsdos**

Forty six screen pictures (Art Studio, Basic, P-Shop etc.)

**PUBLIC DOMAIN DISC 23 - Amsdos**

Forty nine screen pictures (Art Studio, Basic, P-Shop etc.)

**PUBLIC DOMAIN DISC 24 - Amsdos**

Forty one screen pictures (Art Studio, Basic, P-Shop etc.)

**PUBLIC DOMAIN DISC 25 - Amsdos**

Another disc full of MicroDesign pictures & clip art.

**PUBLIC DOMAIN DISC 26 - Amsdos**

Many more MicroDesign pictures & clip art.

**PUBLIC DOMAIN DISC 27 - Amsdos**

Mini Paint Shop: Page header & screen design program.

**PUBLIC DOMAIN DISC 28 - Amsdos**

Needs some more MicroDesign pictures & clip art ?

**PUBLIC DOMAIN DISC 29 - Amsdos**

A bit more MicroDesign pictures & clip art.

**PUBLIC DOMAIN DISC 30 - Amsdos**

G-Paint, a good art program and RSX-LIB.

**PUBLIC DOMAIN DISC 31 - Amsdos**

Dave Carter's second collection of 47 screen pictures.

**PUBLIC DOMAIN DISC 32 - Amsdos**

Some more MicroDesign pictures and clip art.

**PUBLIC DOMAIN DISC 33 - Amsdos**

Some more MicroDesign pictures and clip art.

**PUBLIC DOMAIN DISC 34 - Amsdos**

Some more MicroDesign pictures and clip art.

**PUBLIC DOMAIN DISC 35 - Amsdos**

Another disc crammed full of screen pictures.

**PUBLIC DOMAIN DISC 36 - CP/M**

A Pascal tutorial disc. Teach yourself the language.

Send your orders for discs 1 to 18 to:

**Dave Pratt,**  
14 Dowgate Close, Tonbridge,  
Kent, TN9 2EL

Please order discs numbered 19 to 36 inclusive from:

**Mark Riley**  
8 Readhead Avenue, South Shields  
Tyne & Wear, NE33 3AW

Prices: £ 3.00 includes disc and p&p or £ 1.00 to borrow the disc. (Please make all cheques payable to WACCI.)

**\* FSW \* The WACCI Public Domain Software Library \* FSW \***

All the programs in this library have been fully tested on an Amstrad 6128. The programs are supplied on an as-is basis. Please advise WACCI of any problems, we will do our best to rectify the problem and provide any assistance you need.

**PUBLIC DOMAIN DISC 37 - Amsdos**

The second Amsdos adventure disc contains five superb full length adventures. Includes: 'Blue Raiders', 'Secrets of UR', 'Ghost House', 'Adult One' and 'Raiders'.

**PUBLIC DOMAIN DISC 38 - Amsdos**

The second Amsdos games disc - Contains loads of super games including: Croco Magneto, DrehDriss, Space Froggy and more!

**PUBLIC DOMAIN DISC 39 - Amsdos**

More pictures, includes TV Logo's, Digitised Women & more!

**PUBLIC DOMAIN DISC 40 - Amsdos**

The eleventh MicroDesign picture & clip art disc.

**PUBLIC DOMAIN DISC 41 - Amsdos**

The third Amsdos adventure disc, top quality adventure at a price you can afford.

**PUBLIC DOMAIN DISC 42 - Amsdos**

It's the new improved ISPELL (version 6) with extra words and two pass dictionary. Its been updated and modernised and it now fills a whole disc by itself - Paul's done it again!

**PUBLIC DOMAIN DISC 43 - Amsdos**

**\*\*\* NEW \*\*\***

Picture disc five. Another 37 high quality screen pictures.

**PUBLIC DOMAIN DISC 44 - Amsdos**

**\*\*\* NEW \*\*\***

Demo's Disc 2. Loads of clean, graphically superb demo's and the disc also contains the Vorspann Demo Creator. This super program allows you to write your own demo's.

**COMING SOON TO THE WACCI LIBRARY:**

Toolkit, Epic (Protext Enhancer), The WacCI Index, Calendar, more MicroDesign picture, more demos, more adventures and to keep thing moving loads of Amsdos Utility programs. There'll be some more CP/M discs as well .... No rest for the wicked.

Please order discs numbered 37 onwards from:

**Ian Parker**

24 Oxford Drive, West Meads,  
Bognor Regis, West Sussex, PO21 5QU

Prices: £ 3.00 includes disc and p&p  
or £ 1.00 to borrow the disc.

Please make all cheques payable to WACCI.

*If you wish to order discs from more than one library, but only want to write out one cheque. Send your order (and money) to Paul Dwerryhouse and he'll sort it out.*

## SELECT-A-DISC

**PUBLIC DOMAIN DISC 1 : CP/M 2.2 Only**

The complete FORTH programming disc. The disc contains both the original and updated versions of Forth. A complete guide to Forth and an introduction to Forth programming. This disc replaces CP/M Disc 12.

**PUBLIC DOMAIN DISC 2 : CP/M & CP/M+**

NSWP ..... Superb disc and file management utility  
BINCALC ..... On screen calculator  
COMPARE ..... Compare two files for differences  
LOOK ..... Views and edits ascii and binary files  
BD04 ..... Checks discs for bad sectors and files  
XDIR ..... Directory utility  
UNLOAD ..... Convert COM files to HEX files  
NDDT ..... Improved version of DDT &SID  
RASMB ..... Convert HEX files into mnemonics  
RASMTA ..... As RASMB but saves stack pointers  
LOHD ..... Improved version of LOAD  
LASM ..... Improved version of ASM  
XIZI ..... Z80 to 8080 to Z80 m/code translator  
ZMAC ..... Relocatable Z80 macro assembler  
ZLINK ..... Z80 machine code program linker  
D ..... Directory utility  
SD ..... Directory utility  
DISPLAY ..... Improved text file reader  
DS ..... Directory utility, replaces DIR  
MDIR ..... Directory utility, replaces DIR  
PRINT ..... Superb text file printer utility  
WC ..... Counts the words in a text file  
ED ..... Documentation for ED.COM  
Z80ASM ..... Z80 assembler  
ERAQ16 ..... Improved version of the ERA command  
LU ..... Library file creator

**PUBLIC DOMAIN DISC 3 : CP/M & CP/M**

MBASIC ..... Basic language, PCW compatible  
INSTRUCT .... Basic language instructions  
PROG-n ..... Example programs  
STARTREK .... Game, command the starship enterprise  
CONVERT ..... Utility, converts imperial to metric  
MPG ..... Utility, calculates miles per gallon  
BASCOM ..... Basic compiler  
NOTES ..... Notes on using the compiler  
PROG-n ..... Compiled Basic programs

*Whilst space allows (we're running out fast) we'll print full descriptions of all the Public Domain discs. We're also going to split the homegrown discs into games and utility discs to allow you a better choice of programs.*

# \*\* THE WACCI HOMEGROWN DISCS \*\*

(These discs are copyright (c)WACCI and their authors. They must not be distributed to non-club members)

**AJ's CONCEPT DISC** (128k required)  
Green's strip pontoon, Dripzone plus, Beetlemania, Saucer attack, 3D Maze, Englebert, Globe and Juggle.

### MAGAZINE DISC ONE

The first two WACCI'ies produced. Now available in their original format (on disc or tape.) The magazines easily transfer onto paper.

### MAGAZINE DISC TWO

The third WACCI magazine. Bundled with loads of early WACCI screen pictures plus screen printer program and screen picture squeeze program.

### HOMEGROWN DISC ONE

Masters of Midworld, Minimon, Chardes, Eddy, Chat, Header reader, Fruitworm, Othello, Four in a row, Memdata+, XOX, The World, Jigsaw-1, Pontoon, Progdoc, Helping hand, Bomber, Life, Tunnel Dive, Lock-N-Key, Darts, grid warrior, Jigsaw-2, Star Chase and UFO.

### HOMEGROWN DISC TWO

Amsig, Beetlemania, SDump, Disc, Pixel plotter, Englebert, Globe, Multiprog, Proforma, Functdr, Functsol, Formulae, Regiload, CGen, Excat, Exprint, Story, Neatlist, Romread, Symphony, Dripzone.

### HOMEGROWN DISC THREE

Bouncer, Basic+, Label Printer, Pairs, Missile, S&P, Synth, Squeezer, WacMon, Logopolis, Depro, Disassembler, Nosey, Music Composer, XRef, Breakout, Wordy, Maths magic, Disc Menagerie, Sprites, Sumvaders, Caverns of Skeletor, Zener, Astrosuite, T&P and Hotrods.

\*\*\*\*\*

**AJ's TWILIGHT ZONE** (128k required)  
Escape from WACCI HQ, Starfire, 3DXOX, Invaders, Chat, Star Chase, PacPlant.

### HOMEGROWN DISC FOUR

Trivia quiz, Calendar, Proto, Othello, Snooker scoreboard, Chess clock, Menu, Deffont, Gomoku, Autoline, Amsig help, Spellbound, Calculator, Crunch, Style, Firmware explorer, UDgrab, AGE, Font, Discmap, Tape RSX's, Viewfax, Pharoah, Tee-off, Primes, Di-symm, Oz, Fractal, Diamond miner, Crazy maze, Go, Shifty, Patience, SoundFX, Snakes, Pathfinder.

### HOMEGROWN DISC FIVE

Graphic Magic, Jigsaw-3, Banner, ADAM, Backgammon, SDM (large screen system), Write-it-right, DYS-SYMM2, Sheepdog, Nomopoly, Envelope, Orrery, Dominoes, Contours, Complex, Printer, Diabolo, Poster, Music, and Globe.

### HOMEGROWN DISC SIX

Quiz, Stats, Colprint, Globe II, Disc, SDump3, Straight, Biomorph, S-Light, Dominoes 2, Spread, Numero and Synth.

### HOMEGROWN DISC SEVEN

WACCIword, Romread, Keyboard, Convert, SDump4, Bank+, EZMusic, SPX, Grafplot, Hardcat, AGE128, Wild, Dcheat, Pcheat, Strobe, Magic squares, Decomp, 3dXOX, Invoicer, Pacplant, Typing tutor, LNA.

### HOMEGROWN DISC EIGHT

The kirk Editor, Dwerrybase and the Football pools predictor.

### HOMEGROWN DISC NINE

Chess, Mode, Display, Organise, Mfile, Display, Read, Grapho, Inlays, Edbutt, Tidy, NPC, Invaders and WACCIspell.

### HOMEGROWN DISC TEN

Ascii-To-Mini Office II, Xword, Xdraw, MCPgraph, Fruitrun, K1, K2, K3, loot, Keycard, Cassdisc.DR, Example1, Frame, General.DR, PCBdraft and Progdoc-V4.

### HOMEGROWN DISC ELEVEN

Biglabel, Display2, CGP115, POPT 120D, CGP115, 120D, WACCIword (V3) and WAR.

### HOMEGROWN DISC TWELVE

Hex-to-bas, Hex-to-bin, HP, OHM, OSKD, Resid, Draughts, Example2, Forth Demo, Machine code tutorial, Print, Dotman, Mastercomposer and PDP1.

### HOMEGROWN DISC THIRTEEN

Hex-enter, Davart, Morse tutor, Craig, Knockout, PCHandle, Screen squeezer, Dirsort, Xmas card, Adult Quiz, Xsum, WACCIword(V4), Banker, Donald, No-No, Copy256, and SYSTEM to DATA format.

### HOMEGROWN DISC FOURTEEN

Ahem, Clock, Amslabel, Copier, Clock1, BioSpheres, Regiload 2, Extracat, DFI, Snakes-N-Ladders, NiteShow, Ringmenu, Self Destruct, ID, Memprint, Monthly, Memmap, DFI and Escape from WACCI HQ.

The discs should be ordered from:

**Bob Blanshard**

38 Pelwood road, Camber  
Near Rye, East Sussex, TN31 7RU

Discs cost £ 3.00 each.

or you can borrow a disc for a £ 1 copy the programs you want to keep and then return the disc.

### SUBSCRIPTION RATES

#### UNITED KINGDOM

1 Issue	£ 1.50
2 Issues	£ 3.00
4 Issues	£ 6.00
6 Issues	£ 9.00
8 Issues	£ 12.00
10 Issues	£ 15.00
12 Issues	£ 18.00

### SUBSCRIPTION RATES

#### EUROPE

1 Issue	£ 2.00
2 Issues	£ 4.00
4 Issues	£ 8.00
6 Issues	£ 12.00
8 Issues	£ 16.00
10 Issues	£ 20.00
12 Issues	£ 24.00

### SUBSCRIPTION RATES

#### OVERSEAS

1 Issue	£ 2.50
2 Issues	£ 5.00
4 Issues	£ 10.00
6 Issues	£ 15.00
8 Issues	£ 20.00
10 Issues	£ 25.00
12 Issues	£ 30.00

Send your subscriptions to:

#### WACCI SUBSCRIPTIONS

Paul Dwerryhouse  
7 Brunwood Green  
Hawarden  
Deeside  
CLWYD  
CH5 3JA



# Who's Who

EDITOR : CLIVE BELLABY

WACCI, 12 Trafalgar Terrace, Long Eaton, Nottingham, NG10 1GP



### SUBSCRIPTIONS & TREASURER

Paul Dwerryhouse 0244 534942  
7 Brunswood Green, Hawarden, Deeside,  
Clwyd CH5 3JA <<A man of money!>>

### FAIR COMMENT

Mike Lyons 0942 59942  
85 Leigh Road, Hindley Green, Nr Wigan  
WN2 4XF <<A man of letters!>>

### POKING IN THE LIBRARY

Gwynn Hopkins  
Albion House, Llandre, Aberystwyth,  
Dyfed, SY24 5BS

### FORTH AND COBOL PROGRAMMING

Alan Tilling & Clive Bellaby  
<<The gruesome twosome>>

### WACCI BB

Chris Smith, 0252 318557  
Voice 0252 24721  
v21/v22/v22bis, 24 hrs, 8N1  
<<Runs the BB & prepares new PD disc>>

### PD LIBRARY - DISCS 1 TO 18

Dave Pratt,  
14 Dowgate Close, Tonbridge  
Kent, TN9 2EL

### CLUB SECRETARY

To Be Announced .....  
shortly .....  
.....

### THE WACCI ARCHIVES

Richard Burton,  
5 Polverton Parc, St. Keverne, Helston  
Cornwall, TR12 6PB

### THE ABC OF PD

Chris Carter-Bown,  
1 Hallot Close, New Oscott  
Birmingham, B23 5YW

### BOOK LIBRARY

Steve Lee 0487 814043  
48 Field Road, Ramsey, Huntingdon,  
Cambs, PE17 1JP

### WACCI HOMETOWN DISC LIBRARY

Bob Blanshard,  
38 Pelwood Road, Camber,  
Near Rye, East Sussex, TN31 7RU

### PD LIBRARY - DISCS 19 TO 36

Mark Riley,  
Redhead Avenue, South Shields  
Tyne and Wear, NE33 3AW

### VERY BASIC BASIC

Alan Tilling no phone  
65 Lawrence Road, Altrincham, Cheshire  
WA14 4EL

### WACCI REVISITED

Angela Cook  
Brympton Cottage, Brunswick Road,  
Worthing, Sussex BN11 3NQ

### TREADING THE BAUDS

Geoff Holmes, C/o WACCI  
Write in and let Geoff know what you  
you want to know.

### TAPE LIBRARY

Arthur Cook  
Brympton Cottage, Brunswick Road,  
Worthing, Sussex BN11 3NQ

### DISCOUNTS

Stamper J Metcalfe 0742 461743  
32 Moorwoods Avenue, Chaple Town,  
Sheffield, S30 4WA

### PD Library - DISCS 37 onwards

Ian Parker,  
24 Oxford Drive, West Meads,  
Bognor Regis, West Sussex, PO21 5QU



## SUBSCRIPTION FORM



UK \_\_\_\_\_ ISSUES @ £ 1.50 each = £ \_\_\_\_\_ TOTAL

EUROPE \_\_\_\_\_ ISSUES @ £ 2.00 each = £ \_\_\_\_\_ TOTAL

OVERSEAS \_\_\_\_\_ ISSUES @ £ 2.50 each = £ \_\_\_\_\_ TOTAL

Name \_\_\_\_\_ Phone \_\_\_\_\_

Address \_\_\_\_\_ Postcode \_\_\_\_\_

\_\_\_\_\_ Signed \_\_\_\_\_

● I enclose a cheque / postal order for £ \_\_\_\_\_ inc p&p, ( Please make cheques payable to WACCI ) ●

● If you would like a receipt then please enclose a stamped, self addressed envelope with your subscription. ●

**WACCI, 7 Brunswood Green, Hawarden, Deeside, CLWYD CH5 3JA**



# THE ALL FORMATS COMPUTER FAIRS

Bring plenty of money for the amazing bargains available at these fairs. The best place to buy computer games. The cheapest place to buy a business system. All 16bit and 8bit computers and games consoles are catered for. Everything imaginable to do with computing is there. From books to laser printers. From Public Domain libraries to joysticks. New and second user. If you have any interest in computers you shouldn't miss it !

## FAIRS IN JUNE & JULY 1992

SUNDAY 7th JUNE CITY HALL, CANDLERIGGS, GLASGOW, SCOTLAND. USE M8  
SUNDAY 14th JUNE HAYDOCK PARK RACECOURSE, LANCASHIRE. USE J23/M6  
SUNDAY 19th JULY NATIONAL MOTORCYCLE MUSEUM, BIRMINGHAM. USE J6/M42

admission £4 for adults £2 for children 5-15 years  
ADVANCE TICKETS - NO FUSS - NO Q'S  
£3 ADULTS ~ £2 CHILDREN  
VISA # ACCESS ACCEPTED OR SEND CHEQUE

THESE FAIRS ARE OWNED BY BRUCE EVERISS, PO Box 71. CV33 OXS