

WIA

THE UK'S ONLY SERIOUS CPC MAGAZINE

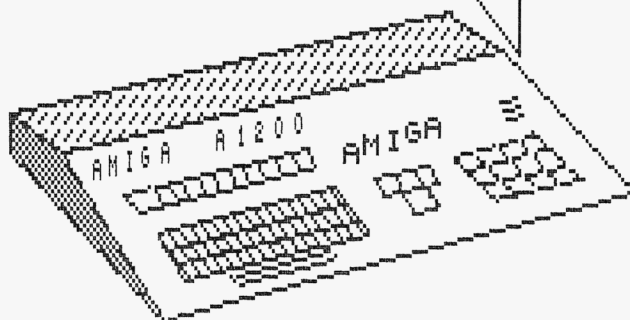
MARCH 1994

ISSUE 76

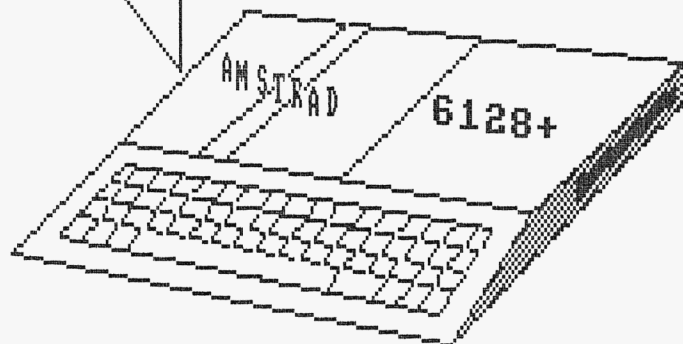
£1.50

LIFE WITH AN AMIGA
IS NOT ALL IT'S CRACKED
UP TO BE

Bet you can't
Multi-task!



Bet you can't do
anything in less
than 5 disc changes
MATE!



THE CPC

YOUR ONE DISC WONDER CPC 94

LETTERS, PROGRAMMING, ARTICLES, PUBLIC DOMAIN SOFTWARE
MACHINE CODE, BASIC, ADVICE, REVIEWS AND MUCH MORE....

CONTENTS

- 4 COMPETITION *To win, first enter!*
- 5 FAIR COMMENT *Here am your answers*
- 12 SPEED TEST..... *We need your help!*
- 13 VERY BASIC BASIC *Tis I does it again*
- 15 ART ON THE PLUS SIDE . *Smart+ review*
- 17 LD A, CODE *Machine code magic.*
- 19 INSPIRATION *We all need it.....*
- 21 THE WONDERS OF PIP ... *Pip! Pip! Hurray!*
- 23 MS800 REVIEW *The MS800 Review*
- 25 SPACE SAVER *Tips from Anthony Jordan*
- 26 SOFTLOC & MULTIFACE .. *A little look inside....*
- 27 WACCI REVISITED *Circles, August 1989*
- 29 CP/M+ EXTRA *Added zip for CP/M+*
- 30 SENTINAL ADVERT *Buy it here.*
- 31 WHO'S WHO *They did it!*

COPYRIGHT: WACCI 1994

Material may not be reproduced either in whole or in part without the prior consent of the copyright holders. WACCI club members may freely reproduced material for their own use. No payment can be made for any material selected for publication.

PRODUCTION METHOD

WACCI is typeset, produced, edited and laid out using, Prottext, Promerge, Prospell, MicroDesign Plus and lots of luck on the CPC 6128 and printed using an Epson Stylus 800 InkJet Printer.

WACCI is digitally reproduced and collated by lots of helpers and a well known Scottish company!

WACCI is distributed by: Russell MacDonald, Luck, and they who put the cost of stamps up!

WACCI: The club for Amstrad CPC computer owners.

FRONT COVER: by Chris Green.

THE TELEPHONE HELP-LINE

- BRIAN NORRIS, (0832) 273973, Peterborough specialist on MasterFile III, plus general advice
- STEWART PEPIATT, (0245) 353903, Chelmsford, Basic, M/Code, DMP2000, VDE, Scrivener & general problems.
- PETER CAMPBELL, (041) 554 4735, Glasgow, OCP Art Studio, Vidi, Basic, MicroDesign & Art Programs, ProPrint, CPC plus m/cs and VideoMaster.
- FRANK FROST, (0983) 882197, Isle of Wight 4pm to 10pm, VDE, CP/M and Prottext.
- IAN NEILL, Work (0926) 416157 9am to 5pm, Warwick Eprom blowing, Hardware, Electronics and more.
- MARK STEWARD, (0773) 822599, Belper, 5pm to 9pm, PAW Adventure Creator, Basic and general help.
- PAUL DWERRYHOUSE, (0244) 534942, Deeside, Clwyd, Basic, Bankman, PD Planner, Ispell, Accounts, etc
- LAURENCE SAUNDERS, Herts, (Work) 061 480 4900 Maplins & technical help. Now at Stockport.
- NIGEL MELLS, (0784) 250763, Ashford, Tape to disc problems, Basic programming and a general natter.
- MIKE LYONS, (0942) 59942, Wigan, Basic, Stop Press, Dk,tronics Speech Synth, Rodos and general help.
- STUART GASCOIGNE, (0272) 777828, Bristol, Basic, Machine code and PD Discs 19 to 36.
- CLIVE BELLABY, (0602) 725108, Nottingham, 8 tp 9pm Basic, Cobol, Forth, CP/M, Writing, Editing.
- JOHN BOWLEY, (0733) 260616, Peterborough. Help and advice about the Book Library.
- MARTIN YOUNG, (0224) 480217, Aberdeen, M/c code, The audio/video chips, Page Setter 64, C and the (by special request) RAM Music Machine.
- CHRIS GREEN, (0895) 633641, 5pm - 9pm, Middlesex, MS800, CP/M Prottext, PowerPage, Art Studio, NC100 and NC200 notepads, The Plus computers and DTP.
- NIGEL CALLCUTT, (0664) 68738, Melton Mowbray. Technical advice, hardware and CPC repairs.
- RICHARD AVERY, Tasword 464, GPaint, Another World. 35 Marlborough View, Cove, Farnborough, GU14 9YA

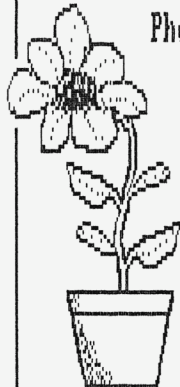
This help-line is provided on a voluntary basis by club members to assist other members. Please call between 7pm and 9pm (unless stated otherwise.)

WACCI

Edited By: The Management
Owned By: The Club Members
Phone: 0602 725108

THANK & STUFF

The New
Editor



Conceived and Founded
By: Jeff Walker
In: October 1986

Developed and expanded
By: Steve Williams



I often wonder about life, time, space and the future of mankind. However on this occasion I'm only concerned about time. Time is one thing that I am always short of, I never have enough. Most of you will know that I work full-time. Others will know that I'm the dominoes league secretary (we've got some 70 teams and five divisions.) I get to lots of All Formats Computer shows, assemble PD discs, write various articles, and in the odd spare moment, edit the magazine.....

WHERE ARE WE ALL COMING FROM?

By now you should be wondering why I'm telling you this. That's easy, it's to help you understand my priorities and to understand why, sometimes, it takes me quite a while to get round to doing something you want!

I should add, that I've a cat that demands constant feeding and also that occasionally I like to sit down and talk to Josie (my wife.)

I'm not moaning, I love every minute of it and I don't want it to change.

However, I always feel guilty when I don't have time to talk or write to members; when I don't have time to send detailed answers; when I have to choose between completing an order or finishing the magazine. (I don't feel guilty about the spelling errors and I'm not considering retiring yet.)

ALL THIS - AND MORE TO.....

This doesn't just apply to me, Paul D works and he has a family, Mike Lyons teaches and has a National Curriculum. I had better take this opportunity to thank them and all the others who make WACCI the success it is.

IF IT'S WRONG....

If we've messed it up, tell us, we'll put it right and apologise for all the trouble we've caused you. Don't sit at

home moaning about us, tell us, we'll put it right! (And do remember that I, like the rest of you, pay my £1.50 per month subscription.)

Feb 11th - The phone was repaired, the peace was nice. Oh well.

TITBITS

Sentinel have reduced the price of XEXOR, now it's only £14.99 (or £13.50 to club members.)

Campursoft have now released DES, (a Desktop Environment System) Stamper is busy doing a review for WACCI. It will be in WACCI 77 (probably.)

Quantum, or STS, or BTL, or who ever they are this month have moved again. Even we don't know where they are. We do know that they haven't delivered goods on time! You are advised to wait until they settle before ordering.

Avatar are not delivering goods, but they are cashing cheques. This used to be called theft. Now it's called, "We are the only good CPC company and we'll do what we like with your money....." Our advice is, you should only touch them with a barge pole, and then only if you are going to use the pole to smash them over the head.....

MicroForm (John Craven), of Preston have ceased to trade, according to his brother (Phil Craven.)

WHAT'S NEW PUSSYCAT?

When you read the middle pages you'll find they have been replaced by: lots more articles etc. If you're wondering where the libraries are, all will be revealed shortly. Suffice to say, that we're taking action to give you better value for money!

TYPING UP / OUT

Paul desperately needs help in getting old series, articles, etc typed up. Can you help? Please contact Paul. His address is on the inside back cover.

EX-SOFTWARE HOUSE DISCS

We've sold out and we're waiting for new supplies. Don't order yet! We'll tell you when the new supplies arrive.

ALL FORMATS UPDATE.

WACCI will be at the following shows so why not pop along and see us!

Mar 19 Haydock Park, M6 J23/A580
20 Birmingham, Nat M/Cycle Museum
27 Glasgow, Woodside Hall,
St Georges Cross.

Apr 9 Brentwood Centre, A12, M25 J28
16 Haydock Park, M6 J23/A580
23 Washington Leisure Cent. Dist 1
24 Birmingham, Nat M/Cycle Museum

May 15 Bristol, Brunel Centre. T/Meads

OUTRO

It's time for me to wish you a fond farewell, 'til we meet again. So until next month, don't be caught out by the April Fools gags! -Clive.

COMPETITION

SPOT

WITH JOHN BOWLEY

Thanx and Stuff, Fair Comment, Inspiration and the 'Zene, Who's Who and the Telephone Help-line from Brian Norris to Chris Green. The items for sale, the PD lists - (the comps are somewhat tacky!) But I wouldn't want to miss a thing - that's why I subscribe to WACCI!
By Carol Bowley.

MY THANKS GOES TO....

Dale Crook for the games he sent me, Peter Campbell for the donation of ProPrint, Simon Cobb for the Mini Office tapes and lastly John Springthorpe for various software.

DRAWING AWARD....

Goes to Richard Avery your award is on it's way to you at this very moment.

DRAWING....

You too could win an award all you need to do is design a front cover and the award is now 4 PD software discs.

JANUARYS RESULTS....

I found that judging this competition to be the hardest one so far, but I managed to reduce it down to four and then I am passing the buck onto Peter Campbell of CampurSoft to pick the winner and the runners up. So I am afraid that you'll have to wait till April for these results. <<Sorry>>

FEBRUARYS COMPETITION REMINDER....

I wish you all the best of luck with this competition and please remember your entries needs to be with me by the end of March please. <<Thanks>>

DECEMBERS COMPETITION....

Silly me I didn't tell you the answer to this competition. Once you have found all the words that were listed, the mystery word that uses up all of the remaining letters was MISTLETOE.

WANTED A BOOK NAMED COM....

Has anyone out there in WACCI world got any books on COMS which they can donate or loan to the book library.

PRIZE ON OFFER....

In the making of WACCI we use a vast amount of paper. So I have decided to award 1st prize a ream (500 sheets) of white paper. Will you also list 3 PD software discs of your choice. <<Ta>>

MARCHS COMPETITION....

In December I set a wordsearch. I had a very good response to this competition and I thought I'll do another one this one is called WACCISEARCH. What you have to do is find the surnames of WACCI members and then tell me what they do in WACCI. For example BOWLEY - Competitions. I have given you one and now you have to find another 13. <<Simple! Have a go>>

D B N X N S M I T H H M
Y W D E N G I O C S A G
R B E U Z Z B B E W R Y
E R A R N A H N P O E D
G F G L R N W W K L K N
X E L N L Y E Y W O R A
E B S A I E H O R P A L
L J Y L C L B O W H P Y
M Y P D X T L Q U X E H
Y J O R E L E I M S R Z
X V M N Z C S M T M E K
A A J U S H L M A G G V

YOUR ENTRY....

Needs to be with me by the 30th April.

CONTACT....

If you would like to talk to me about donations, setting a competition, book requests or for a general natter you are very welcome, you will be able to reach me between 6.00pm - 8.00pm. You can try out of these times if you like but you take your chances. <<Okay>>

BOOK WITHDRAWN NUMBER FOUR....

The Amstrad Program Book by Peter Goode. It as been replaced with BASIC PROGRAMMING ON THE AMSTRAD by Wynford James. Micro Press (0744700248) £1.00

BOOK LIBRARY UPDATE....

I have copies of Amstrad Action from 1987 to 1994 and I have also got the cover tapes for AA from April 1991 to March 1994 which members can borrow. Also I can lend members past issue's of WACCI and they are from issue 16-51. The above will cost 0.86p to post.

94. THE ANATOMY OF THE CPC'S....£2.50
By Bruckman Englisch. (0948015462)

95. AMSTRAD ASSEMBLY COURSE.... £1.00
By Tim Herbertson. (0907792413)

96. BASIC TRAINING IN SYSTEM ANALYSIS
Not CPC spec. Alan Daniels...£1.00

97. MODEL 840 KRS TERMINAL GUIDE.£0.52
By Texas Instruments.(22155619071)

98. THE CP/M PLUS HANDBOOK.....£1.13
By Alan Miller. (0895881586)

99. USING COMPS IN MATHEMATICS...£3.80
By Gerald Elgarten. (0201207931)

100.SERVICE MANUAL FOR 464/6128+.£0.67
GX4000 CONSOLE, MM/CM MONITORS

101.GRAPHICS TECHS. FOR THE 464..£1.00
By Wynford James. (0744700270)

102.Z80 APPLICATIONS.....£1.57
By James Coffron. (0895880946)

SEND TO....

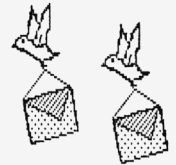
John Bowley. c/o WACCI Competitions
97 Tirrington, Bretton, Peterborough
Cambs, PE3 9XT. Tele no. 0733 260616

See you all next month. Bye for now!!

Fair Comment



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



OH NO! AN EMIGREE

Dear Mike, Happy New Year. I would like to thank Ian Whaley for his kind words, (Issue 73), and offer some help to Oz Dhansay who also had a query about monitors in the same issue.

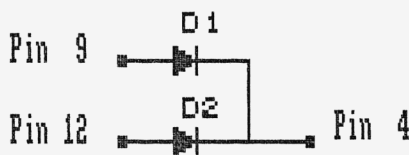
His question was about connecting a CTM 644 to an Atari 520 STFM. Red, Green, Blue and Ground are straightforward enough which leaves Sync. The required sync. signal is available in two ways.

The simplest to try first is to connect the Composite Video from pin 2 of the Atari to pin 4 on the monitor.

The sync. signal is part of the composite video signal and the monitor should be able to extract the data it requires from that.

If that doesn't work then the Horizontal and Vertical Sync signals from pins 9 and 12 respectively on the Atari can be combined using a couple of signal diodes as per fig.1

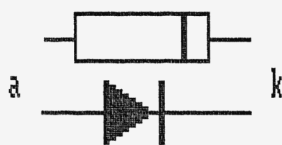
Atari Amstrad



D1, D2 = IN4148

Fig 1: CONNECTING THE MONITOR

PLEASE NOTE: IN4148 DIODE



Band on body of diode corresponds to cathode (k)

One of these methods should work! On a similar vein, George Ho-Yow's circuit diagram is, as he himself suspected, incorrect. The diodes are indeed the wrong way around. The following shows

the right orientation. Like George, however, I have not had a chance to try this out for real so some tweaking of the component values may be necessary. (see fig.2.)

Clive 'phoned me at work the other day with a query about Maplin ROM boxes. I have what I believe to be the last of the company's stock. I have one completely boxed, built and tested version of the Expansion board with 8 ROM slots. This is for sale at £40.00. I also have a kit for the above, excluding the box, for £24.95. If these are of any interest to anyone, then contact me at my new shop.

Which brings me neatly to my last point. I have moved shops and now work in the new Stockport branch. I am currently of no fixed abode whilst I am in the process of selling my flat in Borehamwood and buying a house in Stockport. This means that the home 'phone number printed in the Help-Line column is no use any more and my new work number is: 061-480 4900

Finally, sorry this is on a PC disc written with Tasword but my CPC is still languishing in Borehamwood!

Cheers and best wishes,

Laurence Saunders
c/o Maplin Electronics Plc
259-261 Wellington Road South
Stockport
SK2 6ND

<<Aht baht Aht, Lad? (Oops, Stockport is in Cheshire, isn't it? Best 'talk posh then.) Hello again Laurence and welcome to the borders of the best part of the country. (Cheshire is really only a suburb of Lancashire. - Slips back into dialect.)

Ta very much for the information and assistance as a man of your various and multifarious talents might be expected to know. (Touches fetlock.)

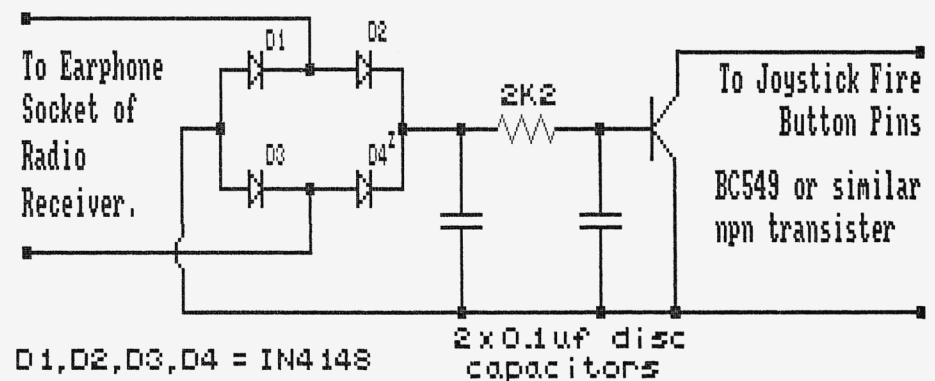
<<Err, isn't a Fetlock the part of a horses leg, at the rear, just above the ankle? It is isn't it. Mike, just what sort of hobbies do you have! Err, you'd better not answer that! I think I shouldn't say more on this subject. Touches forelock! -Ed.>>

We's made a note of yer new phone number, Sir. (Crushes flat cap between grimy paws and fawns ingratiatingly.)

Don't be sorry, Sir. I 'ad no problems wi't transfer, Sir. I 'ad it ower in a minnit. Twer' nowt laahk. (Bows moving backwards away from visitor.) Thanks Laurence. -Mike.>>

Guess who ran out of space in last months Fair Comment? And guess who held some letters over 'till this issue and forgot to mention it. It could only be.. Sorry out of room.

The revised, updated, corrected and modified circuit daigram for the Radio to CPC interface. This replaces the circuit diagram on page 11 of WACCI 73, February 94.



D1, D2, D3, D4 = IN4148

2x0.1uF disc capacitors

Figure 2: Radio to CPC Interface

A HAND OF FRIENDSHIP AND HELP

Dear Clive, On the enclosed disc, the file WACCI.TXT contains extracts from our User Group's newsletters, which may be of interest to you and could be used in WACCI if you wish.

My piece, "A Day in the Life of an Amstrad CPC", appeared in "CPC Domain" without any acknowledgement. Other articles are by our members Ted Brown, Peter Clement, myself and also help from the Hamilton User Group.

We are mainly concerned with the serious and useful side of computing. At recent meetings we have included demonstrations of ProPrint, Romdos XL, MicroDesign Plus, VideoMaster and the Vidi Digitiser.

THE HAMILTON USER GROUP

NEW ZEALAND

Contact: John Court for details

Phone: Auckland (09) 636-6143

Our PD disc library contains 28 discs assembled by Ted Brown, 10 sent by Australian enthusiasts and much clip-art for Stop Press and MicroDesign.

If any New Zealand readers of WACCI wanted to get in touch with our group they could 'phone me on (09) 636-6143.

Please thank all the contributors to the magazine, assemblers, distributors and library copiers for keeping the CPC alive. Wishing you all a happy and prosperous New Year.

The stamps on the envelope shows that many New Zealanders eat Christmas dinner as a picnic at the beach. It did not snow this year. Regards,

John Court
Onehunga 6, Auckland 1006
New Zealand

<<Hiya John, Clive here. Many thanks for the articles, they are very interesting and will be appearing in a WACCI near you. (We will, of course, credit the articles to their authors.)

It didn't snow here. Mind you, we didn't have a beach picnic either.

I hope the discs we sent arrived safely? Good! It would be nice knowing that occasionally snail mail works.

If it would help the New Zealand and Australian members, you could, or the group could, run a New Zealand section of the WACCI PD Library. I sure that we could arrange it between us.

It still cold here, I up to three whisky's per page! And I'm hoping it get colder still! TTFN -Clive.>>

THE FINAL FRONT EAR?

Dear Mike, I am writing to you to tell WACCI and it's readers about my new fanzine, (or rather disczine.) It's called "Another World". It covers the more serious side of the CPC with news, reviews, features, tutorials and PD. Side B of each issue contains PD and Homegrown software.

Issue 1 will be out on February 10th. It will contain a feature on how you can help the CPC, tutorials on AMSDOS, CP/M and BASIC. There is a guide to serious uses of the CPC and reviews of serious software. The software in issue 1 will contain the PD version of Zap 'T' Balls and a Menu creator amongst others.

I am offering WACCI members a 20p discount on the normal selling price of £1.50. Issue 1 can be obtained by sending an SAE and disc, (with payment), to the address below.

Very soon it will be the CPC's 10th. birthday. To celebrate, Another World will be featuring the best software, fanzines, PD libraries and packages, (e.g. 3.5" disc drive packs.) If any company is interested in having a piece of software or hardware in the feature then please get in touch.

I am also on the lookout for PD, Homegrown, Shareware and commercial software for review. Please enclose an SAE if you want your disc(s) returned.

Before I go, I would be more than pleased to give help on Tasword 464 and Gpaint I. Regards,

Richard Avery
Another World
35, Marlborough View
Cove
Farnborough
Hants
GU14 9YA

<<I am loathe to use the letters page as a small ads department, Richard but, seeing that it's you, I suppose I can bend my principles a little.

There you go. -Mike.>>

THEFT IS FLATTERY?

Dear Mike, I am an experienced CPC coder. I have been writing programs on the CPC for over 7 years now, I know how to program Demo techniques, and I know lots about the CRTG, GATE ARRAY, FDC, scanning the keyboard, blowing ROMs and more.

At present I am writing a PC disc reader, an Amiga/ST MOD player and a program to emulate the C64 music chip. I know how to program in Z80, 68000, 6502/6510, Pascal, BASIC and others. I have a CPC6128, a C64 and a BBC, and I have access to an Atari ST and a PC.

Using my knowledge of these machines I can *steal* any code, graphics or music from these machines for use on the CPC. The programs I *steal* the code from are PD and mostly include demos, so the music etc. are also PD, so it is not illegal, <<I beg to differ here - the removal of code from PD programs is, I believe, prohibited by the terms of Public Domain. In any case, removal and re-use of code from *any* program without the programmer's specific permission is theft! -Mike.>>

<<I agree, we don't need this sort of letter - ripping off programs is theft. If you want to use one of my ideas, just ask. Steal it, and I will sue! Theft is theft is theft! Stealing a pen, an idea, a car, an old persons pension, it's all the same, it is still theft. -Clive.>>

<<I am in serious doubt as to the guy's sanity as he's actually printed his full address in a letter which admits to ripping-off someone else's software. Expect "the boys" to call around at your front door any day now Kevin, perhaps FAST might live up to its name for once. -Mike.>>

A URGENT MESSAGE TO:

Kevin Thacker
Whiteway
Nr. Stroud
Gloucester

Cheat, thief and non-member,

Go away! We don't need you!

Mind you, FAST want you!

IT'S A CONVENTION!

Dear Clive, it was great to see you at the All Formats Fair last Sunday, and to meet and talk to other members. (It is great to get out and talk with grown ups now and again!)

The printer I bought turned out to be a little gem!

I'm enclosing the master disc for the Primary Maths Course I bought, there seems to be problems with some of the sections and the screen's all muddled up. <<No problem, turn off the Roms and the program will run. -Ed.>>

Whilst I'm writing I would ask if you can find a copy of Money Manager for me! <<We can, it's in the post!>>

I think the idea of a convention would be wonderful and I would be happy to help with the organization if needed! <<You will be!>> Many thanks,

Angie Hardwick
Bloxwich, Wolverhampton

PS. Dot Williams (of Sheffield) would also be happy to help organise the convention. I've asked her.

PS. How about making a special plea to all the female members, asking them to write in so we can get to know each other! I've met Jacqui Owen and Dot's a friend who moved to Sheffield!

<<Hi Angie, Okay, If you're female and you'd love to talk to other female members, then please drop us a line and we'll put you in touch!

The convention needs an organiser! A willing volunteer, to arrange premises and demonstrations etc. Are you the one we need? If you are, talk to Paul Dwerryhouse, 0244 534942, ASAP.

The convention need to be in the Manchester, Birmingham, Sheffield area in order to be reasonably central for all members. Peter Campbell is talking about bringing a coach from Scotland, however, I'd be happier if he brought some members! Best Wishes. -Clive.

* OUT NOW * OUT NOW * OUT NOW *

CPC Undercover, Issue 3
37 Trimmingham Drive, Brandlesholme
Bury, Lancashire, BL8 1JW

Send: 70p plus SAE.

ENLIGHTENMENT REQUIRED

Dear Clive, do you (or any of the members) know where I can lay my hands on some Light Pen software? Something like a database or graph!

I purchased a second hand Dk'tronics 6128 Light Pen on Rom. There were no instructions with it, but by trial and error I managed to access the Rom.

The Rom appears to work, but I'm not even sure if the pen itself is okay! Before you think I've been had, the whole thing was only a couple of quid. Here's hoping you can help!

Edwyn Stevenson-Bryan
Weston-On-Sea, Essex

<<Hiya Edwyn, I've got a copy of the Dk'tronics Lightpen manual somewhere, when I find it I'll lend it to you.

Meanwhile some brief instructions on how to use the lightpen. Switch off the CPC and insert the rom in a spare slot your Romboard. Be sure to put it in the correct way round, When you switch on, the Rom will sign on.

Use !LIGHTPEN to access the lightpen rom. Point the lightpen at the command you want and press the Enter key. ESC takes you back to the previous menu. You need to calibrate the lightpen (on the older models.)

I don't think the lightpen will work with most software as the software was not designed for use with a lightpen.

You may be able to adapt software to work with the lightpen. The manual includes instructions on this process.

The Rom contains a pretty good art package which is easy (and good fun) to use. TTFN. -Ed.>>

* OUT NOW * OUT NOW * OUT NOW *

ANOTHER WORLD

Issue One

The New Disczine By

Richard Avery
35 Marlborough View, Cove
Farnborough, Hants, GU14 9YA

Only: £1.30 to club members.

* You must send a disc and SAE. *

INFORMATION PLEASE!

Dear Clive, this is the first time I have written to you, so let me say thanks to all who work so hard to produce WACCI, and who keep me amused and informed every month.

I have several questions to ask. Can anyone please help?

The first is, can anyone supply me with a copy of the TASWORD instruction booklet, as I do not understand the use of some of the commands ?

Failing that can anyone explain how to print out the second character set on a DMP-2000 printer. I can use these characters on screen but they will not print out. <<No problem! I just happen to have a original manual for Tasword 6128. It's on it's way to you, have a good read and return it when you have finished with it. -Ed.>>

Secondly can you explain the use of the printer commands HEADER/FOOTER, GET/PUT and the options LECTURA, MEDIAN-COMPACTA, DATA RUN etc. <<I can't, but I'm sure that someone out there can help you. -Ed.>>

Can anyone help with a photocopy of RSX-LIB instruction booklet as supplied on AA cover tape No 9? <<I'm sure that they can help you with this one as well. -Ed.>>

When using the program SCREEN DESIGNER by DJL Software as supplied on Amstrad Action cover tape 30, why do I always get the message "DISC INTERFACE NOT CONNECTED!!" when I know it is, because I have just loaded the program from disc? <<This was designed to confuse you. I've looked at the program and I can't get it to work either. So I will lend you my original disc copy of Screen Designer - Please return it when you've done. -Ed.>>

Is there any way that the files on WACCI MicroDesign Art Disc One, PD 19, be loaded into GPAINT?

<<Yes it can be done, you'll have to write a program to convert the picture from MicroDesign format to a standard 17k screen format. This is not easy to do..... MicroDesign use a different screen format, which is why it can cope with much more detailed work the Screen Designer, Art Studio, GPaint and the rest. Jess Harpur may write one, or he may not! We'll have to wait and see! -Ed.>>

In WACCI REVISITED issue 73 Dec '93 mention is made of a CP/M 2.2 program called DISCKIT2. This is not included

on my master system/utilities disc. Can anyone help by supplying me with a copy please? <<DISCKIT2 and the CP/M plus version DISCKIT3 are copyright of Digital Research. It would be illegal (and silly) to copy it. You have the programs that make up DISCKIT2, they are FORMAT, COPYDISC, DISCCOPY, SYSGEN and BOOTGEN (and one or two others.)

In later versions of CP/M they were lumped together in one package. -Ed.>>

Finally I would like to order 10 Ex-software house 3" discs and borrow the following software please :-

WACCI PD 27 Mini Print Shop.

WACCI PD 86 Utility Disc 6.

HOME GROWN DISC 15. Pagesetter 64.

A cheque is included for £9 to cover the cost of the above. This letter was written using TASWORD. A copy is included on the disc together with the program SCREEN DESIGNER. I do hope you can help with some of these requests. Thanks very much. Good luck WACCI.

Ray Jones

Graigfechan, Ruthin, Clwyd

<<Hiya Ray, I've already answered the bits I know, now it's up to rest of the members to figure out how to use CAMPACTA and the rest. TTFN. -Clive.>>

SHIP SHAPE, AND BRISTOL FASHION!

Dear Clive, Shame on you for telling porky pies in your article on stacks. When you said that after a push, the register concerned will be empty you were exactly 100% wrong.

If you push bc, for example, and then look at the contents of bc you will find that they are unchanged. This is because the stack is designed to save register values temporarily, so that if the current value is corrupted by a further operation, you can get the old value back.

Another point to note is that there is no such thing as an empty register. The value can be undefined in the sense that you can't predict it before you look at it, but all the possible values between &0000 and &ffff are meaningful. Only high level languages can have truly 'empty' or 'undefined' values for variables, which they do by maintaining flags for every variable.

In a similar vein, note that the values that were on the stack and that

you have just popped into a register pair are not erased, but are still there just above the stack top. If you decrement the stack pointer twice, you can pop the same values back again without the inconvenience of another push. I hear you asking why on earth would you want to do that?

Well the only reason I can think of is to retrieve a subroutine return address from the stack, which of course would take us into the second major use of the stack - its role in calls and rets etc.

Lastly, can I suggest that when doing articles on machine code, that we recommend a decent assembler from the library and then forget all about providing Basic equivalents of the assembler code? Keep up the good work.

Stuart Gascoigne
Bristol

<<Hiya Stuart! Nice to see you at the Bristol 'All Formats Computer Fair' on the 6th March. Err, how can I put this without sounding rude.

Yes, you are correct in what you say about there being "no such thing as an empty stack" and that PUSH copies data from the register to the stack.

This is, I suppose, the penalty for trying to over-simplify a difficult concept in a short space of time. Mind you is not as bad as having to attend to "all the sows!"

Sorry, if this caused you a headache or two - I will correct the impression later in the series.

On to a complete change of subject. Many thanks for the updated 'Flags of the World' - version 3 is now on WACCI PD Disc 15. Have a good day. -Ed.>>

LISTEN WITH MOTHER

Are you sitting comfortably, then I'll begin. I have often scanned the PD lists, (I'll put that to music one day), and at a place called Haydock I went and bought four that would give me some information which I required.

They've been copied, CATted, DIRred and outputted to a printer. All of this effort gave me two A4 sheets of information about the contents of the disc. Unfortunately, in trying to run the things I kept bumping into the error "Direct Command Found". That is the computer's way of telling you to sling your hook and go play somewhere

else. <<Well, actually Tom, what it's saying that you're trying to RUN an ASCII text file. -Mike.>>

I gave this some serious thought. The word "Amiga" became insistent in the ear-hole, <<Woah now, Tom. Remember Joan of Arc>>.

I eventually, (persistence pays), reached the Oracle. He Him or It gave me a line of direct command to feed to the 6128 and I was assured that all would be revealed.

It wasn't. I'll admit I may have lost a * or : in the translation from the jottings to the keyboard.

When all else fails - consult the book, <<that's called RTFM. -Mike>>. I entered the OPENIN and OPENOUT proggy which duly copied the stuff to disc - not exactly what I wanted.

I gently switched off the 6128 and went off in a huff to have another fix of caffeine. An hour later I came back and sat admiring my reflection in the monitor while I let the memory banks roam free, <<they can't touch you for it>>, and it came to pass that all was not lost. Many moons ago there was a magazine, sadly no longer with us, called CPC. During the short time I was a subscriber they included a program on one of the discs called READASC.BAS. It seemed reasonable to me that text stored on a disc would be in ASCII - and so it was. I now have some 20 pages of text from PD disc 8 and I now feel a lot better.

Does anybody want a copy of READASC.BAS? It is very good.

Tom Gordon
Leigh, Lancs

<<Hello Tom. Text files are usually stored on discs in ASCII format. I could have told you that to read the text on screen all you need is a couple of lines like:

TO READ ASCII FILES

```
10 OPENIN "filename.ext"  
20 WHILE NOT EOF  
30 LINE INPUT #9, a$  
40 PRINT a$  
50 WEND  
60 CLOSEIN
```

Of course, you then have the problem that if there are more than 20 lines

you can't read fast enough to catch it all before it scrolls past at 120mph. You could always add a line like:

```
45 WHILE NOT INKEY(47):WEND
```

to hold up the scrolling for as long as you press the space bar but, this doesn't give you a permanent record. But if you change line 40 to read:

```
40 PRINT #8,a$
```

The text will be sent to the printer. You do not need to use OPENOUT at all. The important bit is the "#n" after the print statement. The CPC treats the disc drive(s) and the printer as though they were just another kind of STREAM or window, which makes it easy to send text to any output device. The current disc drive is STREAM 9, (#9), and the printer is STREAM 8, (#8).

An easier way is to load the text into a word processor, (as intended in the first place.) Protext, Tasword and Brunword will all accept input from ASCII files on disc.

If the file is too big for Protext then you can split it, (if you have Promerge+), with the SPLIT command. This allows you to break text into a specific number of bytes, (to the nearest whole word), for ease of use. I used this method to get the VDE .DOC

file down to manageable sized blocks before I finally decided I couldn't be bothered to learn how to use it.

You didn't explain what God's cryptic message "Amiga" means. Is it like "Normal Service... -Mike.>>

PATENT PENDINE

Dear Mike, The dust has almost settled from my recent move down here to Pendine. WACCI has found its way to my new home and I thought it was time to show that I am still alive.

I noticed Dennis McLaren's letter about Logo in the January 'Fair Comment'. I'm far from an expert on either CP/M or Logo but I'm fairly sure that the jumps and calls he has found in the area &E003 to &E183 are in fact part of the CP/M BDOS. If that is the case then they should be standard for any given version of CP/M, the only part of CP/M which is hardware dependant is the BIOS.

I believe that Digital Research regard the BDOS as proprietary code and they are therefore unlikely to have released source code for it. Dennis is probably on his own, (unless some member or one of the CP/M User Groups have unravelled it.)

Bob Moffatt
Pendine, Dyfed

<<Iechyd da Bob. Thanks for sharing your ideas on the problem. That's how these things are solved - eventually. I'm none the wiser, but I'm sure that someone's memory might be prompted.

I hope your new home is to your liking. May you have many happy times there and may it always be filled with love and warmth. -Mike.>>

FLUBBALUB

Dear Mike, Though I cannot claim to be an expert, (shadowy or otherwise), there is a possibility that I can help Ron Izett with his DOSCOPY problem, (Fair Comment, February.)

The error messages that he is getting could arise from an attempt to write to a disc that has an unrecognised format, (i.e. something other than AMSDOS in drive A or MSDOS 360Kb/730Kb (not high density 1.2Mb/1.44Mb) in drive B), or a faulty disc. More unusually, it could arise from an attempt to run DOSCOPY from drive B.

A SYSTEM error will also be generated if a disc is write protected, (which may be stating the obvious, but which is easily overlooked), or if a disc or its directory has insufficient space. In both these cases, however, I believe a message is displayed to indicate the nature of the problem.

DOSCOPY handles files as binary or ASCII, and the SETUP menu enables you to select which you want.

As for formatting using DOSCOPY, I have only tried to format MSDOS 3.5" 720K discs and I have experienced no problems in this. Curiously, I find it easier to format standard MSDOS discs this way than using the MSDOS "FORMAT" command on a PC.

Off the top of my head I cannot think of another reason for Ron's problem, other than the possibility of a hardware incompatibility. Yours.

Philip Jimenez
Norwich, Norfolk

<<Dearest Philip, I had to type your letter by hand because DOSCOPY wouldn't recognise the disc format. As you say in your letter it won't access 1.44M format discs. Thanks!

I hope someone can come up with a way of accessing these very large format discs soon and save my aching fingers. -Mike.>>

FROM AN OLD SEW AND SEW

Dear Mike, Regarding Pauline Russack's enquiries about programs for cross-stitch patterns and designs, I have to say that up until she retired a few years ago, my Good Lady owned and ran a business selling knitting machines and all their accessories and in the course of all this was offered a variety of knitwear design programs from time to time.

Our considered opinion was, and still is, that while they might be of benefit to commercially minded knitters, as far as home knitters are concerned they are an expensive and little used luxury.

In the case of cross-stitch design the facility already exists. Look no further than MicroDesign Plus from Campursoft. With a simple set of icons, grids can be superimposed over imported or self made drawings, so that stitches/colours may be marked off and the result printed out, or a

* FOR SALE * FOR SALE * FOR SALE *

6128 with Colour Monitor
TV Modulator and Clock Radio
Mouse, mat and house, Joy Sticks
Tape recorder
Mini Office
Art Studio
Various Games
Pack of 10 discs
All leads + Dust covers
Complete with computer desk!

All of this for just £200

Buyer collects or will set up for
the cost of petrol

Tel: 0942 601837 or 0942 603680

Tom Gordon
25, Eyt street, Leigh. WN7 1XS

blank grid can be made and the design filled in as required. Editing is simple, and the Zoom/edit facilities enable pixel-accurate corrections to be made. I won't go on about it much more, most of us know how good it is, so all I can say is, if you haven't got MicroDesign Plus, get someone to show it to you or better still buy a copy, and if you have got it, send me a disc and I'll give you a copy of my set of icons and some demo drawings which may give you some inspiration to do your own thing. Regards,

Ron Izett
25, Cumberland Ave
Maidstone
Kent
ME15 7JP

<<Dearest Ron. I'm more than sure that Pauline will fall over herself to accept your offer, so I've printed your full address.

You know, why can't we all see the obvious until someone else shows it to us? mind you, I didn't realise that such accuracy would be needed. It just shows you what I know. -Mike.>>

WOODENTOPS STRIKE AGAIN

Dear Mike, as you were kind enough to thank me in WACCI Issue 75 for the detailed diagram to accompany my letter about fitting a side switch to a disc drive cable, I thought that I'd better overcome my usual inertia and actually provide one.

I enclose a 3" disc with the diagram saved as a Powerpage 128 file, screen and clip art - called EL-SIDE.PP, SCR and CUT respectively. I also enclose a printed copy so that you can see what it looks like and two Tasword files containing this letter.

Since writing to you I have been reminded that it is always a good idea to put a resistor between any active line and earth to keep the current down to safe limits and this has been included in the diagram. A 1k resistor is usually provided but I used 2.2k without encountering any problems.

Yours faithfully,
Eric Lothian
Glenrothes Fife

<<Hello Eric. I'm afraid the lack of a diagram was my fault. You sent me one, drawn by hand, which I have, somehow,

misplaced. I thought I had put it in the envelope in which I sent FC to the effervescent and inebriate Clive - but obviously I didn't. Clive would not lose an important document. I often do. I hope you'll accept my apologies which are very profuse, profound and sincere. Thanks for the printout which I have passed on to Clive. -Mike.>>

<<He has, and it's now at the bottom of this page, printed by MicroDesign in the Epson Stylus InkJet. -Clive.>>

READ WITH MOTHER

Dearest readers, welcome to another instalment of your letters. I thought I'd just pass a few remarks of my own before Clive gets down to annihilating my spelling and grammar.

I have had a severe case of hilarity this month after reading Paul's "Blast from the Past" article. I will not dwell on the problems he caused me at home and at school because I couldn't keep an inane grin off my face for more than a few minutes. I will have to get my own back after his nasty and unprovoked attack on my character.

Smoking Guns indeed! I think he's trying to ruin my reputation as a stern and serious person. I am, as you are all well aware, the most generous and warm-hearted letters-person you have ever written to. Aren't I? Have I ever shot my mouth off without think... Forget I asked that question.

Now back to work. Printers! while I don't have enough time at the moment

to write any more articles I keep making little discoveries.

For example, I recently discovered that part of my Hardcopy series is now redundant for Star Printer users. Why?

Simple! You don't need to use 27,116,1,27,54 to obtain the line characters. Why not?

There is a DIP switch setting to do it for you. You can still obtain italic characters with [CTRL]xi but you can save messing about with swapping characters, (27,54). The foreign characters also become easier. Now, wasn't that a waste of time?

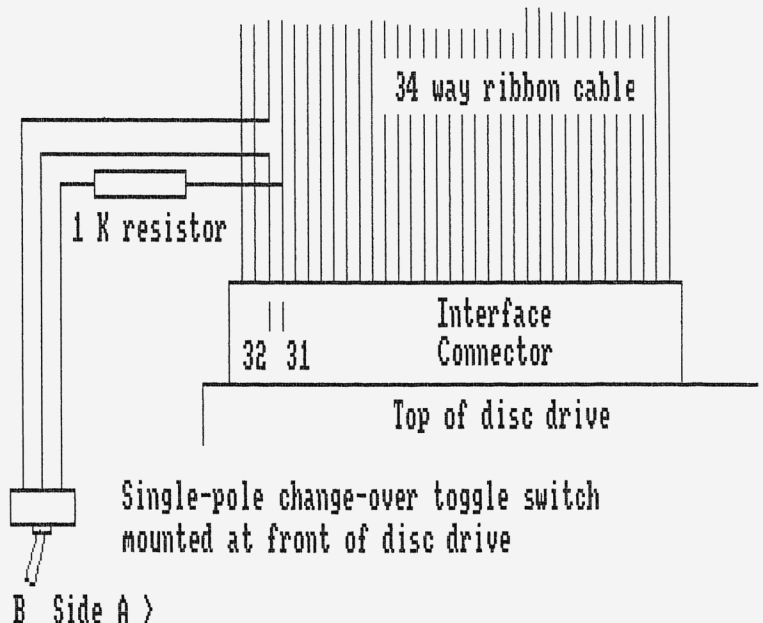
How do you do it? One of your DIP switches, (D-1 on the LC24-200), automatically selects the IBM graphics characters, but does not effect italics. Why on earth didn't I think of that before? -Mike.>> <<To reply or not to reply? Shan't bother. -Clive.>>

SIMPLE SIMON MET A PIEMAN...

Dear WACCI, I am having problems with a Siren Software 3.5" disc drive. I received the drive as a Christmas present and it worked fine... for half an hour. After I'd used the drive for about 20 minutes it began to complain that there was no disc in drive B. This fault persisted and I 'phoned Siren. I was told Mr. Cobb was busy and that I should phone back later. I did this and received a similar message. I left my 'phone number with them and they promised to 'phone back, but I never received a call.

Diagram of side switch fixed to 34 way ribbon cable for disc drive

E. Lothian



I later ordered ROMDOS XL from Siren, with a letter asking about the faulty drive. I received the ROM, but no reply to my letter.

I eventually sent the disc drive back to Siren, by Recorded Delivery, asking them to refund the postal charge - £4.00. The same drive was returned in a large box a week later.

After rummaging around I extracted a small slip of yellow paper from the polystyrene packaging, telling me that there was nothing wrong with the drive and to phone back if problems persisted. I plugged in the drive and, ten minutes later the drive started clunking and threw up a DRIVE B:DISC MISSING error.

Is the 3.5" drive broken, or is my computer damaged? It is connected correctly and the drive works well some of the time. My CPC works well with a 3" second drive. There does appear to be a screw missing from the underside of the disc drive.

Oh, and by the way, WACCI is totally brilliant. Bye.

Richard Smith
Bromsgrove, Worcs.

<<Hello Richard. This is a strange one. I've had considerable experience with Simon Cobb of Siren and I would not hesitate to recommend Siren to anyone. However, there are times when even the best of companies make

mistakes - what are known in the trade as cock-ups. However, if Simon says that there is nothing wrong with the drive I would tend to believe him.

I would ask if you usually have both drives connected, (piggy-back), with some form of connector and a 3rd. drive selector switch, or whether you disconnect and reconnect either drive when you wish to change.

Both methods have disadvantages which may lead to your problems.

I sometimes get disc missing errors when I don't have a disc in drive A, (even though I am accessing drive B), if you press I for Ignore or R for retry it goes away.

What other software do you have that might be interfering with the drive? Do you have ROMDOS in an appropriate position on your ROM board? <<Romdos should be in Slot 1. -Clive.>>

Perhaps a less obvious problem might arise from excessive light falling on the drive. Bright sunlight, (ok, I know we don't often get any), has been known to interfere with my drive.

Are the ventilation slots on the back of the drive clear? These are some of the many things that can inhibit your drive and cause read errors, disc missing errors etc. Can you get a friend to try the drive out on their machine and see if the problem re-occurs. If it does then it is obviously the drive that is faulty.

One point you mention which riles me is the amount of neglect which some companies are guilty of when it comes to after-sales service. Siren Software have usually been exemplary in this respect, (though they aren't perfect), so I would consider it unusual for Simon to treat you like this. Perhaps he will get in touch to sort the problem out if he reads this letter.

Brilliant? - only my nose. -Mike.>>
<<Hiya Richard, Clive here. The drive B disc missing message is a fact of life on the CPC - and it is virtually impossible to get rid of.

The CPC allows a limited amount of time for the read/write head to move across the 40 tracks on a 3" disc and get into position. The 3.5" disc has 80 tracks and thus takes longer to get into position. If it's not in position when time runs out a disc missing message is displayed (nobody thought to write a "sorry you need longer 'cos it's a 3.5" inch drive" message.

I'll agree with Mike about Siren, they usually give very good service and it is most unusual of them not to respond quickly to a problem.

Mike's right about his nose!>>

Sorry, once again we've run out of space - so a number of letter will not appear until next month. Gulp.

* DISCOUNTS ** SAVINGS ** DISCOUNTS ** SAVINGS ** DISCOUNTS *

SIREN SOFTWARE, WILTON HOUSE, BURY ROAD, RADCLIFFE, MANCHESTER, M26 9UR (TEL: 061 724 7572)
RS232 Serial Interface, 3.5" Disc Drives, Romdos XL, Ramdos, 3.5inch discs and lots lots more....

CAMPURSOFT, 10 MACINTOSH COURT, WELLPARK, GLASGOW, G31 2HW (TEL: 041 554 4735)
Phone for the latest details of MicroDesign, MicroDesign plus, VideoMaster, ProPrint and their other programs. See page 22.

SD MICROSYSTEMS, PO BOX 24, HOLBEACH, LINCS, PE12 7JF (TEL: 0760 720381)
10% off all Software and Consumables, whilst Hardware items will be post free. See the advert on Page 18 for full details of their products, which include: Page Publisher, DiscBase, Picasso Art, Kwik File, Discs and much much more

GOLDMARK SYSTEMS, 4 ESSENDON GARDENS, WELWYN GARDEN CITY, HERTS, AL7 3QD (TEL: 0707 321711)
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.) Special Offer, New CTM 644, CPC 6128 Colour Monitors, Only £65 plus postage & insurance.

CPC UNDERCOVER, DAVID CROOKES, 37 TRIMINGHAM DRIVE, BRANDLESDBOLME, BURY, BL8 1JW
Alternative A5 size CPC magazine - usually 80p plus postage, now only 70p plus postage to club members.

SENTINAL SOFTWARE, 41 ENMORE GARDENS, EAST SHEEN, LONDON, SW14 8RF (TEL: 081 876 7032)
10% off all software. Phone for upto date prices, please mention WACCI when ordering. See the advert on page 30 for details.

SPEED TEST

UNCLE CLIVE NEEDS YOUR HELP!

Apart from all of the jobs listed in the editorial, I also teach part time at a local College of Further Education and write specialised training packages. The training packages have been designed to allow us to assess the standard that prospective trainees have reached in order that we select the right level of course for them. After all, who wants to be on a course that is either to easy or to hard? I certainly don't.

PLEASE READ CAREFULLY.

- A. The following test is not a speed test.
- B. It was designed to assess whether trainees can follow instructions in a competent manner.
- C. There is a maximum time limit of 4 (four) minutes allowed for the test to be completed.
- D. The idea is follow the instructions correctly, and complete the test within the allotted time.
- E. I am currently doing the City & Guilds 730 Teacher Training Award. As part of the course I have to design a test so, this is the new test that I have designed. The test needs piloting and the pilot study results will make up part of my final exam marks.
- E. Please complete the test and send a copy of this page to me at WACCI HQ before April 2nd 1994.
- F. Many thanks in advance. Uncle Clive.

CAN YOU FOLLOW INSTRUCTIONS?

1. Read everything carefully. You have a maximum of 4 minutes to do the test.
2. This is designed to test how well you follow instructions, not your speed of following instructions.
3. Read all the questions carefully, before answering any questions or doing anything.
4. Write your name on the top right-hand side of this page.
5. Write your date of birth in the form (04/09/52) immediately below your age.
6. If the day you were born on is an odd number draw a box around your name. If not draw a box around your date of birth.
7. Draw two small triangles on the top left-hand side of this page.
8. Write the number of times that 'Clive' appears in the box above on the top right-hand side of the page.
9. If you were born in an even year, write 'even' on the bottom left-hand side of the page.
10. Multiply this page number by 2, add you age, write the answer here ----->
11. Divide the page number by 6, write the answer here ----->
12. Add the two previous answers together and write the answer here ----->
13. Draw a box around the page number.
14. Draw a triangle just to the left of the box that you have just drawn.
15. Count the number of words in this sentence, add 10, write the answer here ----->
16. Where is the All Formats Computer Show on the 20th March (read page 3!) Write the answer here ---->
17. If there are two small triangles on the left of this page, then draw a circle around answer number 12.
18. Are you good at following instructions? Write Yes or No here ----->
19. If you answered yes to question 19 write no here -> If you answered no to question 19 write yes here ->
20. When must this test be returned by? Write the answer here (see 'E' above) ----->
21. What is the date of the day before the answer to question 20? Write the answer here ----->
22. What is special about the date, that is the answer to question 21? Write your answer here ----->
23. Having read all the questions, only answer questions 1,2,3 and 4.
24. The answer to question 22 is the reason why?

Many thanks for your help in this task. Your hard work is much appreciated by all of us.

VERY BASIC BASIC

Written by
Alan Tilling



Letters to:-
Very Basic Basic
65 Lawrence Road
Altringham
Cheshire
WA14 4EL



HELLO EVERYONE, 'TIS I, LOOPS THE LOOP (AS HE'S DONE BEFORE!)

Last month I spoke amongst other things about always indenting your code when writing loops. To illustrate this and to cover up the fact that I have been lazy this month I am repeating some script I wrote a long (long) time ago. It's not a particularly elegant program but it does have several loops in it.

LESSER SPOTTED NESTED LOOPS

To me the phrase Nested Loops conjures up a picture of a mother bird perching on the rim of her nest with a worm looping round her beak. I don't know why, it is probably because I am ..err ..err, I am ... <<barmy? -Ed.>>

BACK TO SCHOOL

Let's go straight back to school for a example that we all knew and loved - the multiplication tables. Have a look at program 1.

PROGRAM 1: MULTIPLICATION TABLES

```
10 CLS
20 REM tables-1
30 FOR number=1 TO 12
40 PRINT number;
50 NEXT number
60 END
```

It's a single loop that prints out the numbers 1 to 12 on a single line but what is wanted is; 1 two is 2, 2 twos are 4 etc. Clearly this is calculated using a loop but we want to do it for 2 times, 3 times .. 12 times.

One possibility is to get the CPC to ask which table is wanted. So put INPUT "Which table is required",t as line 25 and edit line 40 to ? t*number This will give number ascending by the value given at line 25 but still not all the tables.

What is needed is to make the computer start at the 2 x table, automatically index itself on to the 3 x table then the 4 x and so on.

PROGRAM 2: MORE TIMES TABLES

```
10 CLS
20 PRINT "Multiplication Tables."
30 FOR number=2 TO 12
40 FOR multiplier=1 TO 12
50 PRINT number * multiplier
60 NEXT multiplier
70 PRINT
80 NEXT number
90 END
```

And so I wrote program 2. Well, that got them all, but they were not quite as expected.

BUILD ON IT

Program 3 program gives a better answer. (Notice how each program makes use of a previous program. The line numbers start at 100 only because it makes the indentation of the loops clearer.)

All that's needed now is to decide on the presentation. <<Neat and easily readable please. -Ed.>> My idea of tables is:

```
1 x 2 = 2
2 x 2 = 4
3 x 2 = 6 etc.
```

The CPC screen size of 25 lines is convenient because it allows two rows of tables on the screen. So if 1 to 6X on the top, 7X to 12X will be on the bottom row and since a lot of columns will be required, mode 2's 80 column mode is needed, hence line 140.

To brighten things up a bit, the title is placed on the screen right in the middle (lines 110 & 120). Line 100 clears the screen and at the same time sets up the 40 column mode for the title. Line 130 is only there to hold the title on the screen long enough for it to be read.

NESTED LOOPS (LESSER SPOTTED?)

The best place to start analysing this program is to start at the most deeply nested (or the innermost) loop.

Line 190 says print, in window No. 1 the value of the (number) variable

PROGRAM 3: BETTER TABLES (MORE TIMES)

```
100 MODE 1
110 LOCATE 14,12
120 PRINT "TIMES TABLES"
130 FOR delay=0 TO 1000:NEXT delay
140 MODE 2
150 a=1:b=14:c=1:d=12
160 FOR numb=2 TO 12
170 WINDOW #1,a,b,c,d
180 FOR mult=1 TO 12
190 PRINT#1,mult"X"numb"="mult*numb
200 NEXT mult
210 IF numb <6 THEN a=a+13:b=b+13
220 IF numb >5 THEN a=1:b=13:c=13:d=25
230 IF numb >6 THEN a=a+13:b=b+13
240 NEXT numb
250 END
```

called mult, an X, the value of the (number) variable called numb, an equals sign and finally the product of the contents of mult times numb.

That sounds complex, but a glance at 180 will reveal that (well, first time round anyway) the value of mult {1}. Another look back this time to 160 gives the value of numb {2} and so 190 says print in window No. one 1 X 2 = 2 which of course is the first line of the display.

WOT! NO SPACES?

Please take note that, although no spaces are programmed, Basic puts them there automatically before each number variable. <<Arn't we lucky! -Ed.>>

So the action is that line 190 is acted on and then Basic encounters the NEXT at 200 and goes back to 180, increments mult to 2 and prints line 190 leaving numb still at, by coincidence, 2 and then finds the NEXT at 200 and repeats until mult reaches 12 which causes the "mult" loop to be exited and 210 to be encountered.

Earlier it was said that the tables would automatically index across the screen. This infers that windows would be used and since there are to be a few the parameters must be changed a few times, hence the use of variables a, b, c and d in line 170.

Before 170 can be acted upon a, b, c and d must contain sensible values and so line 150 sets up the window size of 14 across by 12 down.

Now 210 says that IF (the contents of) numb are *less than* 6 THEN add 13 to both {a} and {b}. Variables c and d are not mentioned, so they stay as they were. Hence the window moves to the right by 13 spaces each time.

The tests in 220 and 230 fail at the moment because numb equals 2. The next at 240 sends control back to 160 which increments numb to 3. 170 re-allocates the window and the process repeats.

Eventually numb becomes greater than 5 which causes a and b to be reset to the original values and c and d to be altered to give the second row. 230 is similar to 210 but is used only when the tables are in the bottom rows of the screen.

SEEMS LIKE A NICE PROGRAM

Well that sounds as if it should work and seems quite logical too but when it is run it will be found that it is

not too good after the 6X table. Notice 10 X 7 = 70 is ok but then there is a blank line, 11 X 7 = 77, a blank line then, finally 12 X 7 = 84. Also the window had to scroll upwards to get to the end. The subsequent tables really are indescribable. These effects are caused by two things. The first is that the window size is too narrow and so when a line is filled, a new line is thrown automatically - hence the blank lines. The other is line 220 which each and *every time* numb is greater than 5, *resets* the window parameters thus causing the subsequent windows and hence the further tables to be printed in the same place.

THE FINAL FRONTIER

With these points in mind the final, corrected version of program 4 was born.

To make enough room, the 7X table has been moved up to the top row and the window size of the lower ranks has been increased (b=16 in line 190). Lines 210, 220 and 230 have been amended such that IF numb is less than 8 (don't forget, numb starts at 2 not 1) the window moves across, but when numb=7 (and only 7) THEN reset the window parameters.

230 says that IF numb is greater than or equal to 8 then move the window. Finally 250 means that a (any) key must be pressed before the CPC will do anything else, which in a nutshell, stops the display being all messed up by Basic's Ready prompt.

THE END

Well that shows the development of the program from beginning to end. As you know, the variable names started out as number and multiplier. Because of constraints of the 38 column mode they were shortened which only goes to show that any name or letter can be used in your program. However, it is better if you use meaningful rather than meaningless names.

If variable names are altered in a program using IF/THEN loops, ensure that if the NEXT term is identified, the identifier is altered accordingly.

PROGRAM 4: THE TIMES TABLE FINAL

```
100 MODE 1
110 LOCATE 14,12
120 PRINT "TIMES TABLES"
130 FOR delay=0 TO 1000:NEXT delay
140 MODE 2
150 a=1:b=14:c=1:d=12
160 FOR numb=2 TO 12
170 WINDOW #1,a,b,c,d
180 FOR mult=1 TO 12
190 PRINT#1,mult"X"numb="mult*numb
200 NEXT mult
210 IF numb<8 THEN a=a+13:b=b+13
220 IF numb=7 THEN a=1:b=16:c=14:d=25
230 IF numb>=8 THEN a=a+15:b=b+15
240 NEXT numb
250 CALL &BB18
```

THAT VERY NICE MIKE LYONS



by Kulvir Singh Bahra
Competition Winner, WACCI 75

OUTRO

Reading through these little programs the point of the indentations should be clear.

So until next month, Bye for now, Alan.

PS. One final point, who was it who let that 'Almost a bit mad Penman from Hindley Green' loose on my page? Arrggh!

PPS. It's not that long ago that someone let a whole flock of birds (five, if we're being exact) loose on my page. Arrggh!

ART ON THE PLUS SIDE

A REVIEW OF SMART+ BY REG TABB

Not many people know this but the Plus machines have certain attributes that the standard CPC's don't have. The 464Plus & 6128Plus can, potentially, produce some excellent colourful graphics. This is where Radical's new package Smart Plus comes into it's own. This art package is designed for the CPC Plus range of machines and it can handle a vast range of colours and contrasts.

INTRO ART

There are, as the manual will tell you, four programs in the package. The main one being the Smart Plus program itself. A Sprite data creator and a display program, but more about these later. The main program is operated by the use of the joypad, or a joystick if you prefer. Upon loading up and running the program you are presented at the lower half of the screen with lots of icons in a menu bar. These icons are fairly standard, Box - for drawing boxes. Ellipses, spray can, a printer - yes you guessed it for Print Screen Dump. Over twenty odd functions (*little pictures*) altogether in the control panel (*see below.*)

WHERE AM I?

Coordinates X, Y are displayed in a little box in the lower left hand corner of the screen and as you would expect it shows when and where the

cursor is on the graphics screen. When the cursor is on the Menu area the coordinates will disappear, and only reappear when on the graphics screen. At this point I think I should mention that on a normal screen the X, Y can be from 0-159 across and 0-199 down and on an overscan screen these become 0-192 and 0-271 respectively.

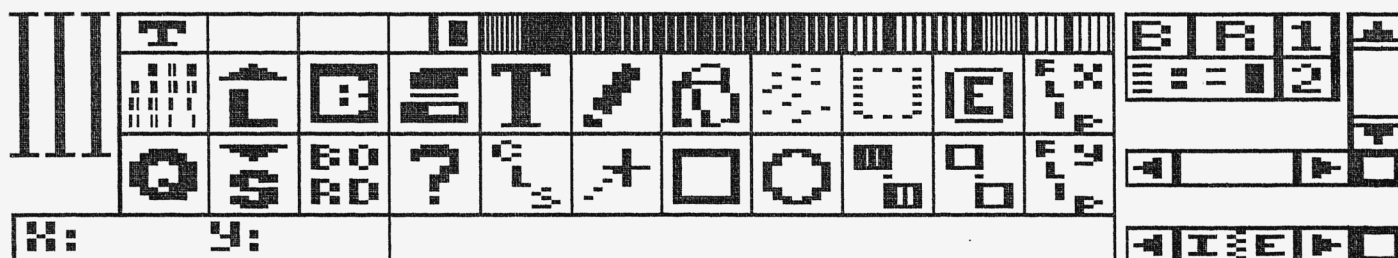
*SMART PLUS was written by:
Rob Buckley, Copyright 1993*

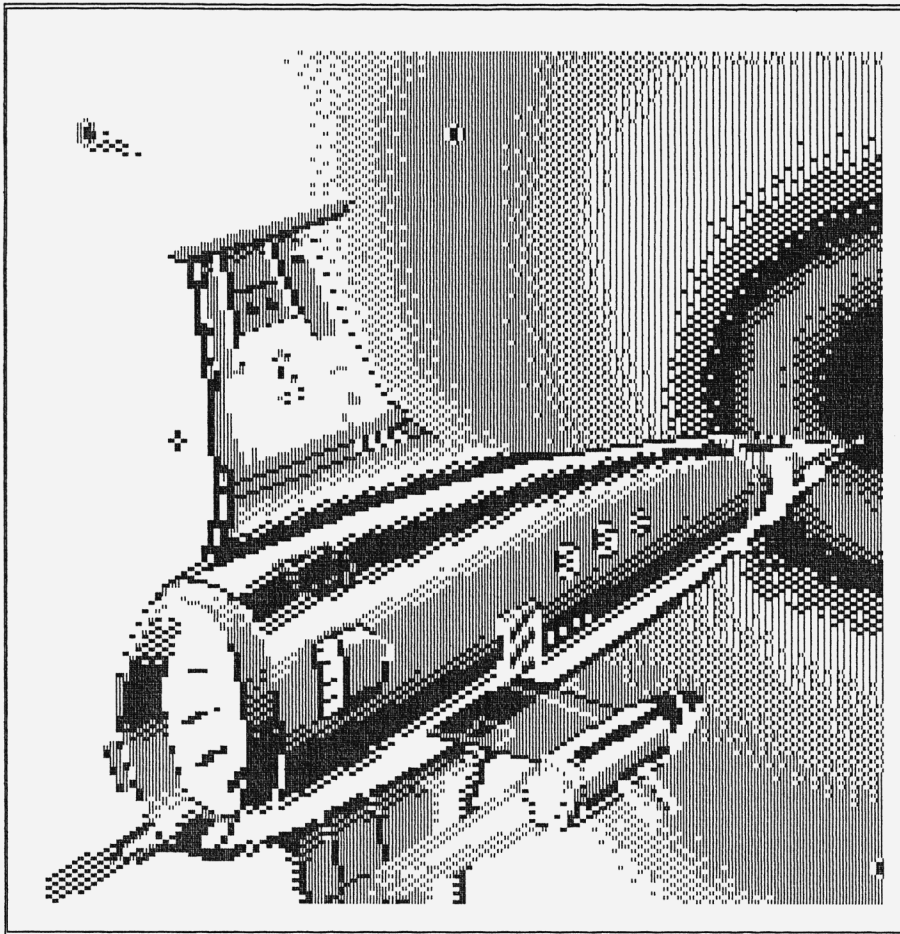
ICON TIME

Getting back to the control panel from where, as the name rightly suggests, everything function you use in Smart Plus is controlled from. As well as the icon'd functions there are a number of different sections for creating good graphics as detailed to the left:

1. RGB Slider. This allows the current pen to be changed to any colour range.
2. Inks and Colours. A row of 18 boxes across the top of the control panel one of which shows the background colour and another gives the foreground or current ink colour the remaining 16 contains colours that are instantly available to the screen.
3. The 22 basic functions include, boxes, ellipses, text, flip and erase, windows, copy etc.
4. Line Type & Memory Box. Allows a selection of four different line types (*See next page.*)
5. Frames and Animation. Allows the creation of up to 64 frames on the screen which can then be used to create animation but see next page.
6. A Transparency function is also provided but see next page.

SMARTPLUS





RUNNING SMART

When you load up Smart+ you will see on the menu at the bottom of the screen an arrow which indicates where on the menu panel you are pointing. Using the joypad you can move it around to any icon or function on the menu. Pressing the fire button on either of the functions will cause the cursor to reappear on the screen in the form a crosshair, now by using the joypad controls you can position the cross anywhere on the graphics screen.

IN BLUE PETER STYLE

As I mentioned above, the review disc contained a display program together with a couple *****.SCR** files (*ones that had been prepared earlier.*) By running the display program you can view these files in normal screen or overscan mode. The CPC is not left out because if you use the display routine to run on a CPC6128 you can enjoy the overscan pictures. The result on my 6128 Plus is fabulous!

The *****.SCR** file on the review disc was a picture of a beautifully designed SpaceCraft flying out of the sunset, lovely. You can if you wish load both these *****.SCR** files into OCP

Art Studio if you have it. And if you do have Art Studio then by using the simple OCPPAL.BAS program supplied with Smart+ you can convert these into loadable SM+ files.

REMEMBER THE LINES

To the far right of the main menu panel is a separate area which deals with Screen Memory and the line types, of which there are four. These quite simply contain continuous lines and variable broken lines. This command is also supported in both the Box and Ellipse functions.

SMART+ runs only on the CPC Plus

128 EXTRA'S

The screen memory functions are for 6128 users only. With these commands you can store a picture as Backup in the screen background RAM then should you make a mistake in your work you can restore your picture back to where you were. Note, however, that this is not a Save function, and consequently turning off the machine will lose any work you have Backed up in RAM.

TWIN SCREENS

Another very useful facility with Smart Plus is that you can swap between two screens, this means that you can work on two screen at the same time. You could, if you want, even have one screen in overscan and the other in normal mode. To copy one to another you would have to first save a block to disc, change to the other screen and then load the block back at the desired point.

OVERSCAN BITS

Finally, in the memory menu, are a couple a icons in the form of horizontal and vertical blocks and these are to do with moving the overscan screen about.

I SAW THROUGH IT

I've mentioned above that there is a Transparency function within the program. It took me through an evening (*about 5 hours*), and well into my second evening before it struck me that what the manual said to do is what I should have done. After that the command worked a treat! Phew, did did I make life hard for myself.

AND FINALLY ESTHER...

I've left the Animation & Frames function until last. It is, or it can be, user friendly if you know what you're doing. i.e. You have to understand what sprites are and 'make' them or program them. I'm afraid that this part of the program left me bewildered. I shall need a lots more time with Smart Plus before I can make use of this function.

SMART PLUS is available from:

*Sentinel Software
41 Enmore Gardens
East Sheen
London
SW14 8RF*

The discounted price to WACCI members is £13.50

OUTRO ART

All in all if you have a Plus machine and you're on the lookout for an art package then Smart+ could be for you.

LDD, A, CODE

UNCLE CLIVE POKES ABOUT IN MACHINE CODE

Apart from the fact that I've got twisted stacks and I can't tell a push from a pull things are going quite well. Let's not worry about last months errors, I've got a whole two pages to fill, so I can create some brand new errors!

MEMORY MANAGER

Machine code can quickly and easily copy (or move) blocks of memory. There are four block transfer commands, LDD, LDDR, LDI and LDIR all are similar in the way they operate.

1. The HL register always points to the source address. The address can be anywhere in memory.
2. The DE register always points to the destination address. The address can be anywhere in memory.
3. The BC register contains the number of bytes to be moved.
BC is used as a 16 bit counter. This means that a maximum of 64k (&FFFF of 2^{16}) can be moved.
4. LDD and LDDR work by decreasing the memory pointers HL and DE.
5. LDI and LDIR work by increasing the memory pointers HL and DE.
6. The R in LDDR and LDIR stands for Repeat. The LDD and LDI commands move 1 byte, set the pointers and wait to be called again.
The LDDR and LDIR commands carry on until BC reaches 0.
7. You can move memory from anywhere in memory to anywhere in memory. You can even overwrite the memory that you are moving, like so:

BC &4000 - Move &4000 bytes
HL &1500 - Source address
DE &1501 - Destination address

This is why you have two commands, one which counts upwards, and another that counts downwards.

9. LDI stands for LoaD and Increment

LDD stands for LoaD and Decrease

LDIR stands for LoaD and Increment and Repeat

LDDR stands for LoaD and Decrease and Repeat

AND NOW FOR SOME EXAMPLES.....

It is not sufficient for me to say the commands work, I like to demonstrate how it works using an example or two.

One of the easier methods is to copy the CPC screen from its usual memory location of &C000 to &FFFF to a lower address, then to clear the screen, and finally restore the screen by copying

the 'screen image' back into rightful memory location. You will (I hope) be surprised at just how quickly a 17k can be move, it usually take less than a second to complete the move.

Once again it's get typing time as you type in and assemble program 21. (Remember to save the program before you run it just in case it crashes.)

A CHANGE IN THE PROGRAM.....

Just for a change, rather than use a Basic program to load the machine code into memory, this month I've used the assembler that is on the "Alternative Firmware Guide" cover disc.

A REMINDER

If you are going to learn machine code then you do need a good assembler, a good "Teach yourself machine code" and a good reference book. Machine code is complex. A good book helps a lot!

PROGRAM 21 : MOVING BLOCKS OF MEMORY USING THE LDIR COMMAND

```
org &8000      ;address for the compiled machine code

ld hl,&c000    ;load hl with the screen ram address (source address)
ld de,&2000    ;load de with destination address
ld bc,&4000    ;load bc with the number of bytes to be moved
ldir          ;move the code

ld a,12       ;load a with ascii code 12, the CLS control character
call &bb5a    ;action the control code in a (to clear the screen)
call &bb18    ;wait for a keypress before continuing

ld hl,&2000    ;load hl with the source address
ld de,&c000    ;load de with the screen ram address (destination address)
ld bc,&4000    ;load bc with the number of bytes to be moved
ldir          ;move the code

ret           ;RETurn control to Basic
```

Compile the program, then save the code with: SAVE "MC21.BIN",B,&8000,&1F

To run the program use: 10 MEMORY &7FFF : LOAD "MC21.BIN",&8000 : CALL &8000

SETTING UP A WORK DISC.....

You'll need a blank Data format disc and the Firmware Guide utility disc. You need to copy 4 programs from the utility disc to your work disc. (Use PIP or your favourite file copier.)

ASSEMBLE.BAS
ASMBHELP.BAS

ASMB6000.464 } CPC 464 users should
ASMB9000.464 } copy these two files.

ASMB6000.128 } CPC 664 and 6128 users
ASMB6000.128 } will use these files.

and you are ready to start work. The assembler comes with instructions.

Use: RUN "ASMBHELP" [press return]

to display the help file on either the VDU or a printer.

BEYOND BASICS

To load the machine code assembler into memory:

Use: RUN "ASSEMBLE" [press return]

When the program has loaded, you'll be asked to select a loading address for the code, press 1, for High Address.

When the code has loaded, you are left with a messy screen and the Basic programs still in memory, to tidy this up, please enter:

MODE 2 : CALL &bc02 : NEW

AWAY WE GO.....

You are now ready, so type in program 21 (please remember to save it to disc before you run it.) A few notes.

1. You must run ASSEMBLE.BAS first.
2. ;ASMBL in line 110, is the RSX that assembles the code.
3. The 'END in line 250 is essential.
4. Line 250 saves the code to disc.
5. Once assembled, to run the program,

use: 10 MEMORY &7fff
20 LOAD "mc21.bin",&8000
30 CALL &8000

That's about it, once again I've been defeated by space (or the lack of it,) so until next Month. TTFN. -Clive.

PROGRAM 21: LDIR (MOVING BLOCKS)

Written for the Assembler on the Alternative Firmware Guide Disc.

```

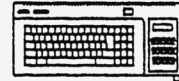
100 MEMORY &7FFF
110 ;ASMBL
120 'ORG &8000
130 'LD HL,&C000
140 'LD DE,&2000
150 'LD BC,&4000
160 'LDIR
165 '
170 'LD A,12
180 'CALL &BB5A
190 'CALL &BB18
195 '
200 'LD HL,&2000
210 'LD DE,&C000
220 'LD BC,&4000
230 'LDIR
240 'RET
250 'END
260 SAVE "mc21.bin",b,&8000,&1F
270 CALL &8000

```

Save the program before running it.

SD MICROSYSTEMS

Seriously supporting the Amstrad CPC.



Software Discs :

Computer Supplies :

DISC-BASE.....£.12.50	Box of 10 Maxell CF2 3" Discs £.17.50
Fast and automatic disc-file organiser	10 DSDD discs for 3.5" drives....7.50
MAILING LIST.....12.50	10 DSDD discs 3.5" bulk packed...5.00
Address manager and label printer	10 5.25" Branded discs.....5.00
KWIK-FILE.....12.50	Disc Head Cleaner Kit 3".....4.00
A versatile computerised card index	Disc Head Cleaner Kit 3.5".....4.00
HOME ACCOUNTS.....15.00	Disc Head Cleaner Kit 5.25".....4.00
Comprehensive personal finance package	Lockable Disc Box (40 capacity)..5.00
GRAPH-MASTER.....15.00	'Pop-Up' Amscase, holds 10 CF2...4.00
Creates line, bar, pie charts and more	10 Maxell Discs in Amscase.....20.00
PICASSO ART (664/6128).....15.00	Flip-Top Disc Case holds 10x3.5".....2.00
Powerful and advanced screen designer.	Disc Carry Case holds 5x3.5".....2.00
PAGE PUBLISHER (128K CPCs).....25.00	Universal Printer Stand.....6.50
The ultimate DeskTop Publishing system	Mouse Mat (anti-static, non-slip).2.50
PICTURE DISKS 1 & 2 each.....12.50	Mouse House (plastic pocket).....2.00
Ready-made library of superb clip-art	Desk Tidy/Computer Paper Trimmer.3.50
GENERAL LEDGER 6128.....30.00	Computer Address Labels, per 100.2.00
Simplified business book-keeping.	
STOCK ACCOUNTING 6128.....40.00	DISC CONVERSION SERVICE.....5.00
Integrated stock control and invoicing	Data transfers PC<>CPC/PCW (per disc)

PCW and PC business software also available, please request a catalogue.

To order, please send cheques/POs or your Access/Visa number/expiry date to:
SD Microsystems (Dept Z), PO Box 24, Holbeach, Lincs PE12 7JF (0760) 720381
10% Discount on above prices for UAUG/WAACI members. Add £1.00 post/packing.



Inspiration

George Ho-Yow eats three machine code routines for breakfast.....

Hello WACCI programmers, welcome once again to your favourite corner and mine: Inspiration. Rummaging through the recesses of my mind, I have a recollection of discussing the use of the CPC for modelling a lift controller. Yes, it's coming back to me.. Uncle Clive has commissioned us to come up with a gizmo which can be used for controlling a lift in WACCI towers.

Last month I started with the Input/Output specifications and the functionality to support the I/O requirements and specs. Since then, I have made a few abortive attempts at thinking up clever formulae to control the lift directly from the button pushed. But then I thought, hang on a sec, that is no good, after this is a fun fanzine. We must have FUN, FUN, FUN. So straight-forward programming with a neat little trick here and there is the order of the day, right?

Before I launch headlong into this months article, I'll start with the end of last months article ('cos Clive ran out of room last month.)

<< Continued from WACCI 75 >>

SCREAMING OUT! AN UPLIFTING TASK?

So much for the Input side of the program, now for the output side we're going to use our CPC screen display for the lift, as I suggested the word "LIFT" can be moved UP XOR DOWN the screen. We could show the state of the lift-button pushed, the door, and the direction of travel also, all on one line to keep track that the program is working well.

The movement of the lift is of course the tricky bit! If the lift is stationary, no problems when a call-button is pushed. It's when there are more requests while the lift is moving that the fun starts.

For example, the lift is on the ground floor. Someone enters it and pushes the lift-button for Floor 3. In a split-second after this someone on the first floor pushes the button to go DOWN, while someone on the second floor pushes the button to go UP, and Uncle Clive pushes the call-button on the third floor.

According to the rules, the lift should continue on to the second floor and stop. The person on the second floor will enter and push a lift-button. Uh-oh! We have priority clash

here, we know the first person set the lift to go to the top floor, suppose the second person entering the lift pushes the Ground lift-button. Well he will have to wait, we'll continue to our first destination and turn around.

IT GETS HARDER

Gawd, this program is turning out to be more tricky than I thought. I'll have to think about how the storage of requests are to be prioritised and what size of memory is required to store a series of any number of random requests. Back to the scenario, we are now at the third floor and the first and third persons get out to visit Uncle Clive. They're in such a hurry that they didn't see Uncle Clive get

in the lift as they left it. Uncle Clive pushes the Ground floor lift-button. The lift starts down where the lift stops for the second person at last. Then on to the Ground floor.

I trust you are as suitably confused as I? Just think how the lift works in a multi-storey building for example. You're welcome to have a go using the techniques I've suggested, or whatever way you feel comfortable with.

Don't for heaven's sake send your lift through to the third floor, Uncle Clive won't be happy with the lift going through the roof! Byeee....

<< AND NOW! THIS MONTH'S ARTICLE >>

HELLO POP PICKERS

Okay, let's look at the lie of the land. We need to move the lift Up or Down according to where it is in relation to the button pushed. I am going to ask a favour of you, that is to forgive me for respecifying the CPC key to Floor-button assignment. The revised table is figure 1.:

We won't try any of the very clever stuff like allocating the "s" key for emergency stops.

I don't know about you, but after getting in a muddle with the inputs, I thought why not try the output side?

Figure 1: THE CPC KEY TO FLOOR-BUTTON ASSIGNMENTS

CPC key	Floor-button	Direction	Lift button (direction doesn't matter)
a	Ground	Up	9
b	First	Up	1
c	Second	Up	2
d	Third	Down	3
e	Second	Down	
f	First	Down	

And dabble, dabble, dabble, here's a program that moves the lift up and down. Like the Duke of York's men, it marches up and down the floors. Once again it type-in time, start by typing in the first part of program one.

WHAT DO IT DO?

The first part of the code sets up the fixtures and initialises the lift to start at the ground floor and move upwards. It's not very exciting, but nevertheless we've made a good start.

By setting the value of direction% to one, zero or minus one, we can get the lift to move Up, Stop or Down respectively. The next three lines of code (lines 222, 224 & 230) do this.

CHECK THAT LIFT!

The following code checks what the lift is doing every five seconds. It protects the passengers by stopping the lift from going through the roof, or the crashing through the ground floor. These checks are done in lines 2020 & 2030.

CHECK, CHECK AND DOUBLE-CHECK

Incidentally, it's always very good practice to check for input/output data are within bounds. I remember this from a lesson where I had to write a program to echo the input from a mad typist to the line printer.

When I ran my program it worked okay, but when the lecturer began hitting keys at random and as quickly as he could, my program locked-up. He said that the object of the program wasn't just to echo the input but to cope with corrupted data being input.

This happens quite often if the input is via a telephone-line and noise affects the data. Since then I always remember to check that invalid data is screened and an error reported to the system supervisor.

BACK TO BASICS?

I'm back to the program now, the other lines shouldn't be too difficult to follow.

Please note that lines 2000 to 2050 is the interrupt handler (subroutine) called by line 220 every five seconds.

ADDITIONS AND ENHANCEMENTS.

To start you off on the input side of the program you might like to add a few lines to display the key that was pressed.

OUTRO

You can then replace the code in line 1020 et seq, with code to process the keys for the various push-buttons on the floors and in the lift. Don't forget to cater for invalid keys being pressed. It's not too important in this fun program, but it helps to think along those lines. Until next month, have Fun. Bye.

PROGRAM ONE: THE LIFT DEMONSTRATION BY GEORGE HO-YOW

```
10 MODE 2
20 LOCATE 5,1: PRINT "Third Floor";
30 LOCATE 5,2: PRINT " d";
40 LOCATE 5,9: PRINT "Second Floor";
50 LOCATE 5,10: PRINT " c e";
60 LOCATE 5,17: PRINT "First Floor";
70 LOCATE 5,18: PRINT " b f";
80 LOCATE 5,25: PRINT "Ground Floor";
90 LOCATE 5,24: PRINT " a";
200 x%= 20: y%=25: direction%= -1 'bottom of screen and moving UP.
205 l$= "LIFT g 1 2 3"
210 LOCATE x%,y%: PRINT l$;
220 EVERY 250,2 GOSUB 2000 'every five secs.
```

The code to change the lift direction.....

```
222 IF y% >= 25 THEN direction%= -1 'change lift direction up.
224 IF y% <= 1 THEN direction%= 1 'change direction down.
230 GOTO 222
```

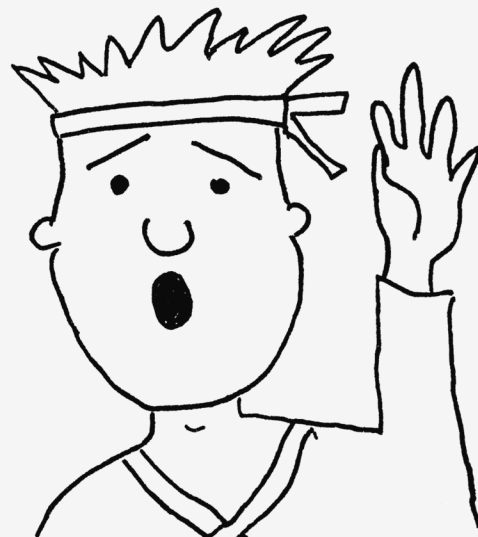
This part stops the lift from either crashing through the ground floor or flying through the roof. Both of which the passengers will deem to be unacceptable in lift travel.

```
2000 LOCATE x%,y%: PRINT SPACE$(20)
2010 y%= y%+direction%
2020 IF y% > 25 THEN direction%= 0 'stop lift!
2030 IF y% < 1 THEN direction%= 0 'stop lift!
2040 LOCATE x%,y%: PRINT l$;
2050 RETURN
```

You can add these lines to enhance the program.

```
100 EVERY 5,3 GOSUB 1000 'input handler

1000 x$= INKEY$: IF x$= "" THEN RETURN ELSE x$= UPPER$(x$)
1010 LOCATE 40,25
1020 PRINT "You pressed "; x$;
1990 RETURN
```



George Ho-Yow By Kulvir Singh Bahra, Competition Winner WACCI 75

THE WONDER OF PIP

THE PERIPHERAL INTERCHANGE PROGRAM BY JOHN R HUDSON

The popularity of NSWP shows how difficult it is to cast off a reputation. PIP Version 3 has virtually everything that NSWP has and more; but NSWP was developed from SWEEP which attempted to overcome the limitations of PIP Version 2.

So often people write into magazines with queries which PIP, or other CP/M Plus utilities, could solve for them, I thought it might be useful to provide a run down of the many features of PIP which I use and which are there for free to 6128 owners. I'll also cover the differences with PIP version 2.

IT'S MORE THAN A FILE COPIER

PIP is often criticised as a copying program but that function was only incidental to its original purpose as the Peripheral Interchange Program.

It provided an easy way of linking the different peripherals which made up the early micro-computers.

It drew on the syntax of the day in that assignments in BASIC were made with LET x=y; so assignments in PIP follow the same format.

PIP a:=b:*. * means 'LET drive A have all the files on drive B'.

CONVENTIONAL DRIVE

I say 'drive' rather than 'disc' above because PIP follows the convention that where you get something from or send something to ends in a colon.

The monitor is CONOUT:, the keyboard is CONIN: - usually combined as CON:, the LISTING device (printer to you young 'uns) is LST: and so on.

So 'A:' and 'B:' mean drive A and drive B to PIP - it doesn't bother which disc is in the drive unless CP/M reports a problem.

CONVENTIONAL ASSIGNMENT

PIP Version 2 has four assignments other than drives: CON:, LST:, PUN: and RDR:. PUN: is for a serial output device, or PUNch; RDR: is for a serial input device or ReaDeR. So 464/664 users can use a printer and a serial port with CP/M.

By the time Version 3 came out this was too limiting and Version 3 can have as many separate devices as you

want - the only limitation being that each must have a unique name. On the 6128, they are CON:, LST: and AUX:, which is the serial port, and CON: and AUX: can be split into CONIN:, CONOUT:, AUXIN: and AUXOUT: if required - the latter is essential for 1200/75 BAUD transmissions.

PCW users will know that CEN: is the add-on external printer port and PAR: the built-in external printer port.

READING AND WRITING FILES.....

If I want to check what is in a text file PIP CON:=D:filename.ext[z] will send the file to the screen. (I will explain the [z] later) and though this is not recommended for a long file as you can't stop it once it has started. (I usually know what is in long files, it's the short files I forget.)

If I want to write a short text file such as a submit (*.SUB) file, PIP D:filename.ext=CON: puts the cursor at the left margin of the screen.

I then enter the relevant text. You cannot use <RETURN> in text files created with PIP as <RETURN> replaces two characters in most files; you have to use CONTROL-M followed immediately by CONTROL-J to create the two characters for PIP.

Similarly, you cannot use DEL or CLR. So you have to avoid making typing errors - but I usually manage to do that for the short files for which I use PIP. At the end, you have to add the CP/M end-of-file marker CONTROL-Z at which PIP will whirl into action and copy the text to disc.

RECEIVING NOTEPAD FILES

I use PIP D:file.ext=AUX: to receive files from the Notepad. Unfortunately, the Notepad was designed with PCs in mind and does not send CONTROL-Z.

However if you pull down the special characters with Symbol-Menu and enter the right arrow symbol two lines above Z in the display, this is in fact CONTROL-Z and PIP whirs into action as soon as it receives it. I don't put CONTROL-Z into each file; I have a separate file called CONTROL-Z on the Notepad and send that after each file.

But whichever way you do it, you don't need any fancy software to download files from the Notepad, just a serial interface and a cable. After experimentation, I find 4800 BAUD is quite safe with the Amstrad/PACE serial interface - 9600 is too fast.

CREATING A SUBMIT FILE

My *.SUB file only contains:

```
SETSIO 4800  
PIP
```

as everything else is already correctly set up on the 6128s.

On the 464/664 you need to set up the serial interface differently and use PIP D:filename.ext=RDR: but otherwise PIP works in exactly the same way.

A TEST OF MEMORY

As PIP holds the file in memory before passing it on, there is a limit on the effective file size when receiving material using the serial interface - though I have transferred files of over 30K using version 3 - since there

comes a point when PIP has to write some of the contents of memory to disc during which incoming characters may be missed. However, as long as the receiving device can handle it, there is no limit on the length of files PIP can transmit.

PRINTING FILES

You can use PIP LST:=D:filename.ext to print any text file; if it is not in ASCII format add [z] to the end of the command and if you use a sheet feeder rather than continuous paper add [p] to ensure PIP makes a page break.

SERIAL PRINTING

Finally in this part, you can use PIP LST:=AUX: with the Notepad to print short files directly via the serial port rather than unplugging your printer from the computer.

You need to have everything ready with the print head at the top of form or you will lose some of the early characters and you cannot exceed the printer's buffer because PIP is a one way operation - it cannot return any

command from the printer to the Notepad to stop sending characters. A slow BAUD rate is recommended for the serial link. <<300'ish. -Ed. Depending on just how fast your printer is!>>

To unhook the connection, just send a CONTROL-Z from the Notepad - it doesn't affect the printing but it lets PIP know you have finished.

MULTIPLE TRANSFER MODE

Though all the examples I have given show the command tail following PIP, you can also use PIP in multiple transfer mode by entering PIP<RETURN>.

An asterisk appears on the left hand side of the screen. You can then remove the disc with PIP on, leaving that drive free for copying between any other discs and you can enter as many command tails as you wish until you have finished with PIP. You then press <RETURN> and PIP exits to the CP/M prompt. If you are repeating a command such as a:=b:.*[aov] when you are backing up a load of discs, you can use the CP/M command CONTROL-W to recall the last command.

SHUT YER HOLE - WRITE PROTECT ON!

You may also find it useful in a long session to close the read only hole on the discs you are copying from because PIP cannot warn you if you mix the discs up. However, it will tell you if you put a read only disc in the destination drive, allowing you to swap discs and use CONTROL-W to repeat the instruction.

THOSE EXTRA COMMANDS.....

As will be clear already PIP can take a whole range of additional commands which affect the material being transferred in one way or another.

For a full list, consult one of the CP/M text books; or wait until next months instalment in which I will outline the main options.... Meanwhile I'll tell you that I frequently use both the C and V options.

IT IS, ISN'T IT

Once you've got the hang of PIP you'll find it a versatile, powerful and easy to use program. Until then, pip pip,

John R Hudson

The ProPrint Print Enhancer from CampurSoft is the ideal companion for Protex - allowing freedom to produce high quality documents which stand out and impress. Whether it's a letter heading, school essay, or just a change of style, ProPrint is what you require. *Just look at all these features!*



CampurSoft,
10 McIntosh Court,
Wellpark,
Glasgow.
G31 2HW. Scotland.
☎ 041 554 4735

Price: £15.99 or £14.40 to WACCI and UAUG members. (10% discount)

NOW AVAILABLE ON ROM at £24.99 (or £22.50)

- ⇒ Underlined, Compressed, Enlarged, Bold
- ⇒ Reversed, subscript, superscript, and Italics.
- ⇒ Proportional & non-proportional modes
- ⇒ Variable space control
- ⇒ Micro-spacing control
- ⇒ Over 40 font styles provided
- ⇒ Very powerful font designer

- ⇒ Variable Line feeds
- ⇒ Reverse Line feeds
- ⇒ Up to five fonts in memory at a time.
- ⇒ User friendly
- ⇒ A comprehensive manual

ProPrint is compatible with *all* the Amstrad CPC's and Plus Machines.



CampurSoft
Design / Software / Hardware

All Prices Include
U.A.T and Postage &
Packing.

PAYMENT METHODS:

Cheque, Postal Order,
EuroCheque, I.M.O. and
All major Credit cards.



Card Holders call 041 554 4735

This advert was produced IN ONE OPERATION using Protex, ProPrint, a CPC 6128, a KDS 8 bit Port and a DMP3160 9-pin Printer. AL 09 0879

The graphics for the ProPrint advert were produced using MicroDesign and an Amstrad DMP3160 9-pin printer.

MS800

CHRIS GREEN EXPOSES THE MS800 DISC OPERATING SYSTEM

For years, the de facto standard for high capacity DOS systems (known as HCDOS systems) on the CPC has been ROMDOS. However, with the rise in popularity of side switches, it now seems to have a worthy competitor, by the name of MS800.

HCDOS : THE WORKS

The process by which HCDOS systems use are normally that; You have a ROM that intercepts the disc ROM, therefore automatically setting up the required drive for the high format (and also offering format detection in the case of ROMDOS). A disc based HCDOS would be a program that you would load into the computer (normally straight after you switch on), which would allow you to format, copy, verify etc as well as installing the new format information for the required drive.

HCDOS : THE ADDED BENEFITS

The added benefit of the high capacity formats that have been available (such as ROMDOS, RAMDOS and RODOS), is they have been able to take advantage of the auto side switching on the 80 track, double sided drive.

This normally resulted in a disc formatted in the region of 800K with a 256 entry directory.

The old crop of HCDOSs suffered from major compatibility problems, with ROM based systems often being shut out and disc based systems causing memory full messages, both because they tended to occupy too much memory.

Also, the 80 track drives used were 5.25 inch or 3.5 inch. The discs could not be turned over (well the 5.25" can) and so if you used a normal AMSDOS format (which you often had to), it could only format up to 178K on one side, making them even more wasteful than a three inch disc.

HCDOS : AN ANSWER

The answer to all the above problems lies in a small switch and a piece of software called MS800. The side switch as it is known is fitted to the drive

and allows for manual control of the drive heads (while still retaining the automatic function for software that used it). See WACCI 67 for information on how to fit one.

800 INTO 400 WILL GO!

With the induction of the side switch came a glut of formatters that allowed for high capacity formatting (to 800k) but instead of one 800k block, they did it in two 400k blocks, each with 128 entry directories.

The benefit of this is the smaller disc size and directory size, allowed for more software compatibility. But the DOS was nearly always disc based and therefore always managed to eat at least one byte of memory.

MS800 breaks the mould of every other HCDOS to date in that rather

than having a program on a disc or ROM that would be loaded at the beginning of a session, before the large format disc was used, the large format disc contained the program to reconfigure the disc parameter blocks.

I'll explain this later, as I run through each section of the program. As you'll see from "the OPTIONS Menu", there are five options. We will dive straight into the first, formatting.

OPTION 1: FORMATTING

Selecting this will bring up a prompt for the drive you wish to format. MS800 is capable of formatting large format discs in drive A, and using them in that drive, providing the drive is a 80 track one. DDI-1 and 6128 owners, do not try to format a 3 inch disc to 400K unless you have an 80 track 3 inch drive.

After choosing the drive, you are presented with a list of the various disc formats available within MS800.

MS800 ©1991 THE **OPTIONS** MENU

- [1] FORMAT a disc or CHANGE FORMAT
- [2] VERIFY disc
- [3] CATalogue drive A
- [4] CATalogue drive B
- [5] EXIT program - to drive A

DRIVE A STATUS

TRACKS : 40
SECTORS : 9
DIRECTORIES: 64

FORMAT TYPE: 0

DRIVE B STATUS

TRACKS : 40
SECTORS : 9
DIRECTORIES: 64

FORMAT TYPE: 0

The first is standard DATA format with the other five being large formats.

The large formats are created in a strange way. The first two tracks are formatted to standard DATA, the next 80 tracks are formatted to the large format as required. Then a program is saved to the first two tracks, which although displays a DATA format size, can only hold 2.5K of information.

With the format complete, you can then exit MS800 and use the disc. When catalogued, the disc will show up as 177K free, and with one program on it, called DISC.BAS.

Type RUN "DISC and the screen will clear and a new catalogue will take place, this will reveal the true size of the disc (between 360k & 400k).

177 INTO 400 WILL GO!

What's happened? DISC.BAS has altered the disc parameter blocks for the new format (and to ignore the two DATA tracks), catalogues the disc and clears itself from memory, thus not taking up and RAM space.

If formats three or five are used, a second file is stored on the DATA tracks called MS800.COM. This is used under CP/M Plus (MS800 discs are not compatible with CP/M 2.2). Simply boot up CP/M and type MS800 from the high capacity drive. A message telling you that the large format has been activated for that drive will appear and the prompt will return. You can

now use that format of MS800 disc under CP/M. Only the two DATA formats (numbers 3 and 5) can be used under CP/M Plus. Formats 2 & 4 cannot be used under CP/M Plus. (Please Note: MS800 cannot be used with CP/M 2.2.)

AN ODD FORMAT

Format 6 is an odd one. It formats two 178k segments on each side, thereby creating a four sided disc. The first half of each side is a standard DATA format containing a 1k program called PART2.BAS. You run this program to access the other part, which contains another 1k program to get back to the first half.

The format was designed for use with the Multiface and other programs which would not accept use of MS800, so that you could use half the disc for other things (so as not to be wasteful.)

Remember, MS800 format's one side of a disc at a time. To format the other side, use a side switch and repeat the formatting process.

At the bottom of the screen are two windows, these show which formats have been selected. This should ensure that you've selected the right format.

OPTION 2: VERIFY A DISC

This checks the disc for formatting errors. The verify routine will detect the format of the disc. It is very reliable and is recommended if you use cheap discs, like I do.

OPTION 3 (AND 4): CATALOGUE A DISC

Yes, they catalogue a disc in drive A or B, and this is the main purpose of the format windows.

OPTION 5: EXIT TO DRIVE A

This quits the program and returns you to BASIC whilst setting up the drives to the formats shown in the windows at the bottom of the screen.

THERE'S SOME UTILITIES AS WELL!

MSCOPY: a simple file copier, but it works well enough. It will copy most unprotected files, but will destroy a Protext file and can only copy ten files at a time (even though it only holds one of them in memory at a time). It is also limited to copying files of less than 41K. Use PIP under CP/M Plus if you can or get Xerox for use under AMSDOS.

MSMENU is a utility program which allows you to run awkward programs from high format disc. It works on a few programs, but not on most.

The documentation is very good, and is easy for a novice to understand.

The ROM version adds two RSX's to BASIC. |AA runs DISC.BAS on drive A and set the screen mode to MODE 2. |BB does the same for drive B.

GET IT HERE!

MS800 is available from GVL Microform, it costs £9.99 on either disc or Rom. You can buy the ROM and disc together for £14.99. The side switch is also available from them as a DIY kit and as a 'plug in' module for 6128 owners.

UPDATE: 8 BIT PRINTER PORT

CPC owners who don't have an eight bit printer port should take a look at the one from Goldmark. It's built into a 6 foot cable and comes with software to enable it. It costs £25.00 but WACCI members can get a discount. I highly recommend it. Plus owners do not need this as the Plus machines have a full eight bit port as standard.

OUTRO

I'll be back with more reviews of the software and hardware associated with the CPC essentials lists. If you've a program or piece of hardware that you have written or own which you think is essential, get in touch and I'll take a look. See you soon.

Chris Green

MS800 © 1991 THE **FORMAT** MENU

Please select format for Drive A...

- [1] 40 TRACK, 9 SECTORS, 64 DIRECTORY
- [2] 80 TRACK, 9 SECTORS, 64 DIRECTORY
- [3] 80 TRACK, 9 SECTORS, 128 DIRECTORY
- [4] 80 TRACK, 10 SECTORS, 64 DIRECTORY
- [5] 80 TRACK, 10 SECTORS, 128 DIRECTORY
- [6] 80 TR., 9 SEC., 64 DIR. **FOR PART1/2**

DRIVE A STATUS

TRACKS : 40
SECTORS : 9
DIRECTORIES: 64
FORMAT TYPE: 0

DRIVE B STATUS

TRACKS : 40
SECTORS : 9
DIRECTORIES: 64
FORMAT TYPE: 0

SPACE SAVER

HOW TO USE POUNDS TO GAIN SPACE BY ANTHONY JORDAN

And once in a while along the way, my brain, it worked, for me. I have been a programmer, programmed machines all day..... Now, here's an interesting little snippet or two I chanced upon while experimenting with Locomotive Basic.

POUNDS MAKE PRIZES

What do pounds make? Savings in space! What the.... Read on to find out. Go to your friendly CPC and at the 'Ready' prompt carefully key in the following strange looking line:

Figure 1: The strange line.

```
10fori=1£to£9£step£2:print£i:next
```

Notice that where you would normally expect spaces, the line contains pound sign characters (it's the right of the CLR key, and to the left of the equal '=' on the keyboard.)

Now LIST the line and you will see something more readable:

Figure 2: The More Normal Line.

```
10 FOR i=1 TO 9 STEP 2:PRINT i:NEXT
```

Thus the pound-signs appear to have been automatically replaced by spaces. But *not so*, there's a great deal more to it than that. The pound-signs have actually been replaced by nothing, nil, zilch (or any other equivalent word you can think of).

DON'T BE CAUGHT PEEKING!

If you were to peek memory you would discover that (for example) the phrase '1£to£9' which appears in Figure 1 is stored as just three tokens &OF, &EC

and &I7. These are the Basic tokens for '1', 'TO' and '9' respectively. The LISTing routine makes it appear that spaces are present when they are in fact not.

PEEKING SPACE! TASTY?

In contrast, if you had keyed in the line (with spaces) as shown in Figure 2 and then peeked memory the phrase '1 TO 9' would be seen to be stored as FIVE tokens viz: &OF,&20,&EC,&20 and &I7 where &20 is the token for a space. <<That inner space? -Ed.>>

WHAT NEXT? A LEADING SPACE!

Where is this all leading to? Well, if you were to:

- 1) Load a Basic program into memory
- 2) Save it in Ascii by a command such as LIST "MYPROG",A
- 3) Use a word processor to change spaces to pound-signs (though not those within quoted strings, DATA statements, REMarks etc....)
- 4) Reload the word-processed program.

You'll find that the modified program looks normal when LISTed and RUN, but occupies about 10% less memory space. If you finally resave it again, the resultant file will also be about 10% smaller than it was originally.

So here's a way of compressing your programs by 10%. Cheers!

HANG ABOUT, THERE'S MORE

There is another tried and tested method of removing unwanted spaces from within a program. And apart from removing the unwanted spaces it also

helps to tidy up the program as well. Before using the £ method of removing unwanted spaces, you could try the POKE &AC00,1 method, let me explain;

1. Load the program into memory.
2. Type RENUM and then press Return. This RENUMbers your program into neatly numbered lines 10,20,30 etc.
3. Type POKE &AC00,1 and press Return.
4. Type AUTO and press Return. Each line is displayed in turn on the screen. Keep going until you run out of program lines.
5. Save the program to disc.
6. Type LIST, to list the program. Lo and behold, as if by magic, all the excess spaces have gone.

And there you have it, the alternative method of reducing excess spaces? No, it should be used before you use the £ method (to speed up the £ method.)

That's all for now folks! Anthony.

THE WACCI PUBLIC DOMAIN LIBRARY

* UPDATE * UPDATE * UPDATE *

WACCI PD DISC 95 : Amsdos
Print Enhancer By Geoff Short. A neat word processor that not only prints documents it adds a range of fonts to the text as it prints. Epson compatible printers only.

WACCI PD DISC 96 : CP/M 3.1 Only
PRINTIT is a similar program, but designed for CP/M.

Please note: You need an 8 bit printer port to run the program.

A LITTLE LOOK INSIDE THE MULTIFACE AND

Code content copyright 1988/89/90/91 STS Software and HANGMAN 1991. x-trak 3.0

Soft-Lok v2.2 by STS Software 1991

WRITTEN FOR THE EXPANDED AMSTRAD CPC COMPUTERS 1991

BY PAUL DWERRYHOUSE

One area not covered by WACCI is the games scene as WACCI concentrates on the serious side of the CPC. Whilst it can be said that the Multiface has a serious side to it I'm afraid Soft-Lok can't. Richard Wildey (of Sentinel) has sent a copy for review so I thought that a Sunday afternoons work with it and the Multiface might just be deemed fit to grace the WACCI pages.

INTRO DUCK

So what was the Sunday afternoon job that I put in hand to test both the Multiface and Soft-Lok? Well my son James has collected a few tape games over the last year or so and he wanted them transferring to disc. Not for the purpose of piracy but simply speed.

MULTIFACE II

The Multiface is available for all CPC's and it has been around since 1986. It costs £39.94 plus £2.00 p&p from Romantic Robot.

With the Multiface II fitted to the expansion port, with the cassette deck hooked up I fired it up his 6128. I popped a game cassette into the deck and ran the game. This I did for several games which took about *two* hours. When each game had loaded I pressed the red button on the Multiface to freeze the CPC and hand control over the Multiface. At this stage I chose to save to disc using my own typed in filename.

The Multiface doesn't save the game but the entire content of the CPC's memory in compressed format. The Multiface must be present to run the game but there is a PD program to take the place of the Multiface if you have more than CPC.

Not every game would load with the Multiface plugged in. Some detect it and reset the CPC. Another problem for the Multiface method are multi-load games. I managed to save very successfully three games to disc only

to find when playing them that asked for the tape to be re-wound and PLAY on the cassette deck to be pressed.

Still I did have some success so what could Soft-Lok do with the ones the Multiface couldn't touch that were not multi-loaders.

SOFT-LOK

The program, written by Rob Scott, Richard Wildey and Richard Fairhurst, has been around since 1991 but the current version has been updated for the latest Speedlocks. It works only on the 128k CPC's. It costs £14.99 but Sentinel offer WACCI members a 10% discount so for £13.50 it's yours.

The document file is contained within the program but it can be printed out. I found it contained all the necessary information but it isn't very well laid out. I found you had to read it a couple of times in order to make sense of it. The program is menu driven and therefore easy to use.

I tried four tapes but it appeared that only one happened to be a speedlocked game. However, as that one did transfer to disc, I have to say that the program worked successfully. If it can transfer one then I'm happy it can cope with all speedlocks and it wasn't that painful a solution.

CONCLUSIONS

Well after my Sunday afternoon of tape to disc transfers I came to the following conclusions:

1. *Neither appear of any use with multi-load games.*
2. *The Multiface is much easier to use and can do so much more as well as costing three times as much.*
3. *If DJL speedlock games fill your drawers then the Soft-Lok program is your solution.*
4. *There is no real answer if you have a mixed bag of tape games and not a clue as to the protection system placed on them.*

Of course this is not a Multiface verses Soft-Lok review but an observation on one of my Sunday afternoons and two CPC products.

I feel that you need to be armed with a list of speedlocked games before you could safely purchase the Soft-Lok program. WACCI is the wrong place to look for a list of that sort.

The Multiface is a superb utility and I can recommend one to add to your general enjoyment of the CPC. Second hand ones (*mine is*) are becoming more available so maybe its a good time for you to look around for one.

OUTRO DUCK

Richard Wildey have given WACCI a copy of Ball Bearing. The game is free to the first person who will do a (*small*) review for WACCI. *Paul.*

**Written specifically for the DJL
Speedlock cassette protection**

WACCI

AUGUST 1989

REVISITED

WILLIAM LAWRIE SHOWS YOU HOW TO GET CIRCLES UNDER YOUR EYES

This month, in time travel with WACCI, we are dashing back to 1989 and the thirty-fourth WACCI. The month was August and William Lawrie was chatting away about drawing circles. Let's join William as he flies round in ever decreasing circles and disappears up his own program.

INTRO

The measurement of an angle can be obtained by using one or more systems of measurement. The two systems that the Amstrad uses are the degree and radian measures.

THE PIEMAN

In these two systems the positive direction of measurement is anticlockwise and the negative direction is clockwise. In the degree system a straight angle measured anticlockwise has an angle of 180 degrees and in the radian system the same angle measures 3.142 radians which is the number PI. This angle is exactly one half the

circumference of a unit circle (a unit circle has a radius of one.) From this we can deduce that:

180 degrees = PI radians
360 degrees = 2 x PI
one degree = PI/180

Now study Fig 1. This is a unit circle of radius equals one, with the origin at the centre. To plot the point (p) of the circle we must calculate the cosine and the sine of the angle AOB. The cosine is found by the formula AO/OB and the sine is found by the

formula AB/OB. Fortunately for us the Amstrad can calculate the cosine and sine using the commands COS and SIN. The x coordinate of point (p) is the cosine of the angle and the sine of the angle is the y coordinate.

From this we can say that:

$x = \text{COS}(\text{angle}), y = \text{SIN}(\text{angle})$

Therefore, by using the scaling factor (radius) any circle can be drawn. When using a FOR NEXT loop in BASIC without defining a STEP size, the Amstrad defaults to step size one but as there are only six integers in a circle plotted in radians ($2 * \text{PI} = 6.283$) it is obvious that we must define a step size. The formula ($2 * \text{PI} / 360$) will give a step size of 1/360th of a circle which is the same step size as plotting in degrees.

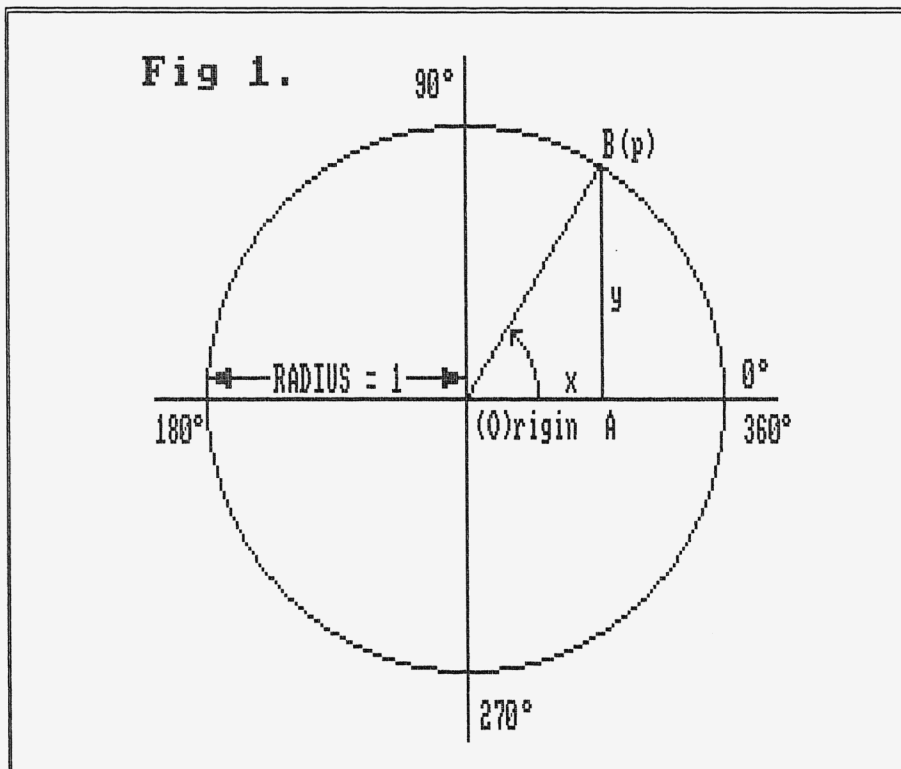
CONCLUSIONS

Now to sum up. To plot a circle in radians we would use the routine:

```
1 ORIGIN 320,200:radius=100
2 FOR angle=0 TO 2*PI STEP 2*PI/360
3 x=COS(angle)*radius
4 y=SIN(angle)*radius
5 PLOT x,y:NEXT angle
```

and to plot the same circle in degrees we would use the following:

```
1 ORIGIN 320,200:radius=100
2 DEG:FOR angle=0 TO 360
3 x=COS(angle)*radius
4 y=SIN(angle)*radius
5 PLOT x,y:NEXT angle
```



AND THERE'S MORE

Type in the Circle program and refer to the program notes. The results of the program can be seen in Fig 2. As an added bonus it draws a sine wave. Alter line 330 to:

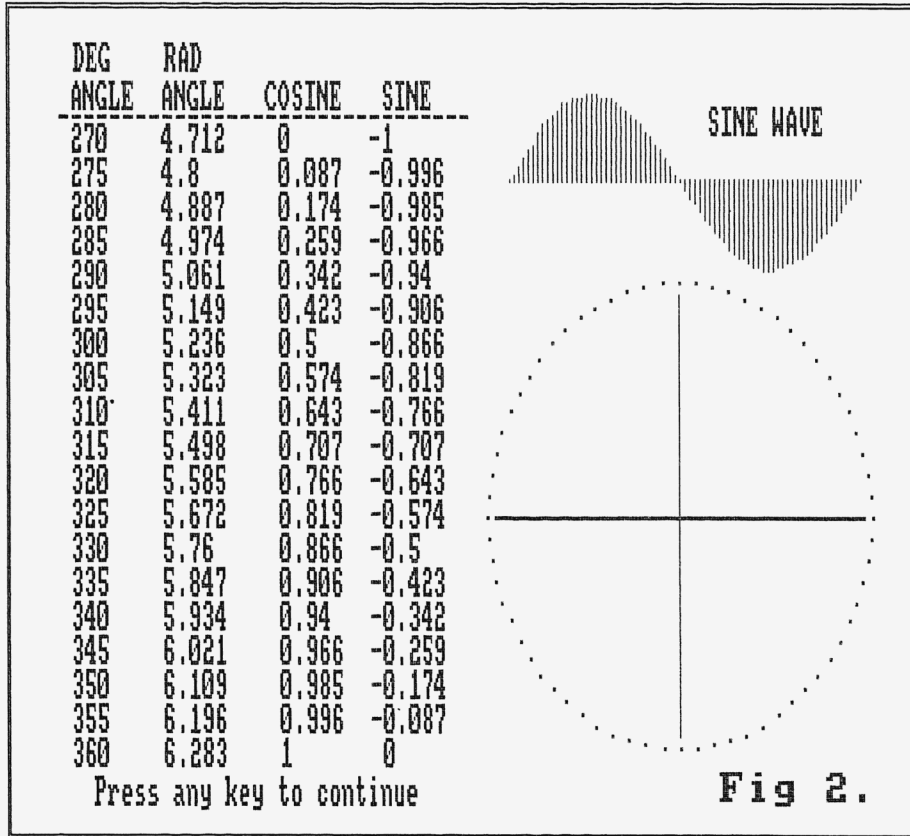
```
330 MOVE hor,vert:DRAW x,y
```

and this will draw the angles. To see the x,y lines of point (p), as described in Fig 1, change line 330 to the following:

```
330 MOVE x,vert:DRAW x,y
```

William now disappears.

PROGRAM NOTES		
20-30	Sets mode and inks.	300
50-60	Defines and swaps windows.	310
70	Defines a function to print numbers to a maximum of three decimal places.	320
80-170	Sets up screen.	330
180	Position of sine wave.	340-350
190	Range of sine wave.	360
200-210	Scale factors for the sine wave.	370-380
220	First coordinates of sine wave.	390-400
230	Circle centre and radius value.	410-430
240-270	Draw line through circle.	440
280	Initialise variables for loop.	450
290	Start of loop.	460



```
10 REM Circle Program
15 REM by William Lawrie 1989
16 '
20 MODE 2:BORDER 26
30 INK 0,26:INK 1,0
40 PRINT:PRINT TAB(57) "SINE
WAVE"
50 WINDOW #1,1,40,1,25
60 WINDOW SWAP 0,1
70 DEF FNn(x)=INT(x/0.001+0.5)
*0.001
80 PRINT "DEGREES";TAB(11)
"RADIAN"
90 PRINT
100 PRINT TAB(2)"ANGLE";
110 PRINT TAB(11)"ANGLE";
120 PRINT TAB(22)"COSINE";
130 PRINT TAB(34)"SINE"
140 PRINT STRING$(40,"-");
150 MOVE 320,0:DRAW 320,399
160 DRAW 639,399:DRAW 639,0
170 DRAW 320,0
180 h0=324:h1=636:v0=340:v1=380
190 x1=0:x2=360:y1=-0.5:y2=+0.5
200 xscale=(h1-h0)/(x2-x1)
210 yscale=(v1-v0)/(y2-y1)
220 xx=h0-x1*xscale:yy=v0+y1
*yscale
230 hor=480:vert=150:radius=120
240 MOVE hor-radius+6,vert
250 DRAW hor+radius-6,vert
260 MOVE hor,vert-radius+6
270 DRAW hor,vert+radius-6
280 first=0:last=360:num=5
290 FOR degree=first to last
STEP num
300 angle=degree*(PI/180)
310 c=COS(angle):s=SIN(angle)
320 x=hor+radius*c:y=vert+radius*s
330 PLOT x,y
340 h=xx+degree*xscale
350 v=yy+SIN(angle)*yscale
360 MOVE h,v:DRAW h,yy
370 PRINT degree;TAB(10)
FNn(angle);
380 PRINT TAB(22)FNn(c);
TAB(33)FNn(s)
390 lines=lines+1
400 IF lines<19 THEN 460
410 LOCATE 8,25
420 PRINT "Press any key to
continue"
430 WHILE INKEY$="" :WEND
440 lines=0:degree=degree-num
450 LOCATE 1,5:PRINT CHR$(20);
460 NEXT degree
470 END
```

CP/M + EXTRA

UNCLE CLIVE POKES ABOUT WITH CP/M PLUS (v3.1)

Once more we ferret around with CP/M 3.1 and come up with an unusual amendment to CP/M's automatic loading and configuration routine. But first we start (as usual) with the background understanding (apologies to those of you who can suck eggs!)

HISTORY, UNCLE CLIVE AND SOME FACTS

As CP/M 3.1 loads it searches the disc for an ascii file called PROFILE.SUB, if it finds the file, it searches the disc for the program SUBMIT.COM and if it finds SUBMIT.COM it then actions the commands in PROFILE.SUB.

Why? Because many years ago when computers were young and innocent, someone sat in an office and decided that that's how it would work.

They never knew that one day in the near future computers would invade the home in their millions and leave us stranded thinking, "Why does CP/M 3.1 work this way?"

THE NEXT STEP

Once you know how this works, you can patch CP/M and change the file that CP/M searches for..... and that means you can have a selection of different automatic start up routines on the same disc. Wow!

TRY IT OUT

You need a blank data format disc onto which you need to copy:

C10CPM3.BIN :as created in WACCI 75
SUBMIT.COM :on the CP/M master disc

CP/M 3.1 and CP/M Plus

Once there was CP/M v2.2 and then they decided to create an updated version - CP/M 3.0 (which because of the extra features was called, CP/M plus. The next version was called CP/M 3.1 or CP/M plus v1.0 and as you can now see CP/M plus and CP/M 3.1 are in fact, one and the same thing.

Use PIP or your favourite file copier to copy the files. Now type in and run program three, this creates two ascii files PROFILE.SUB and NEWFILE.SUB on the disc. Save the file as CPMSUB1.BAS before you run it.

PROGRAM THREE: CPMSUB1.BAS

CREATES TWO DIFFERENT SUBMIT FILES

```
100 OPENOUT "profile.sub"
110 PRINT #9,"THIS IS PROFILE.SUB"
120 PRINT #9,"DIR"
130 CLOSEOUT
140 '
150 OPENOUT "newfile.sub"
160 PRINT #9,"THIS IS NEWFILE.SUB"
170 PRINT #9,"DIR"
180 CLOSEOUT
```

Do a quick CAT to ensure the two new files PROFILE.SUB and NEWFILE.SUB are on your disc. Type in program four and save it as CPMSUB2.BAS. This loads and runs the standard version of CP/M, the one that accesses PROFILE.SUB.

PROGRAM FOUR: CPMSUB2.BAS

```
10 OPENOUT "d"
20 MEMORY &BFF
30 CLOSEOUT
40 LOAD "c10cpm3.bin",&C00
50 CALL &C00
```

When you run the program, CP/M loads and "THIS IS PROFILE.SUB" is displayed followed by a disc DIR (CAT.) Okay so that worked. Now we need to alter the

filename so we access the alternative file, NEWFILE.SUB. Before we do that, here's a few pointers for you.

1. The filename must be 7 characters. (You can have trailing "SPACES".)
2. It must be in UPPERCASE. (CP/M does not accept lowercase filenames. It was developed before the lowercase keyboard was developed.)
3. The name starts at address &637C
4. The filename must end in .SUB (the extension is added by CP/M.)

AND ALMOST FINALLY.....

Type in program five, then save it to disc as CPMSUB3.BAS. The program pokes (patches) an alternative filename into CP/M and CP/M searches for NEWFILE.SUB and not PROFILE.SUB.

PROGRAM FIVE: CPMSUB3.BAS

```
10 OPENOUT "d"
20 MEMORY &BFF
30 CLOSEOUT
40 LOAD "c10cpm3.bin",&C00
50 FOR mem=&637C TO &637C+6
60 READ a$: POKE mem,ASC(a$)
70 NEXT mem
80 CALL &C00
90 DATA "N","E","W","F"
100 DATA "I","L","E"
```

Once the program has been saved you can run it, CP/M should (will) load and "THIS IS NEWFILE.SUB" followed by a disc DIR (CAT.)

OUTRO

You can add this option to last month's program, or you could add a variety of Early Morning Startup (.EMS) options.
TTFN (back next month) Uncle Clive



41 Enmore Gardens
East Sheen
London
SW14 8RF

Sentinel Software

All prices include P&P. Cheques/PO's made payable to Sentinel Software. Please allow 28 days for delivery

10% Discount to WACII & UAUG Members

XEOR.....£14.99

Edit discs, copy files, recover corrupt discs, create custom formats even. Guard software investment with the backup option. If you only ever buy one disc utility, you must make it this one. "Never before have I seen a piece of work so comprehensive" (AA 96)

SOUNDTRAKKER.....£24.99

The music package (AA 92 -93%). Use your CPC as a piano, then add instruments and drums, and even transpose the melody. Arpeggio options give the unique effect of over three notes at once. Don't make do with inferior products use the soundtrakker the professionals use.

ZAP 't' BALLS - Advanced Edition.....£13.99

Addictive arcade action from the coder of Super Cauldron and Prehistorik II. Spectacular graphics and tons of levels. "It's stunning" (AA 89 - 84%) (128k only & joystick required: One - player only on CPC Plus).

PRO-EXT.....£14.99

Do you use Arnor's Protex word-processor? If so, buy the flexible package which gives you not only new (editable) fonts, but also ruled lines, powerful graphics and charts. Ideal for business applications, simple DTP, Headed paper...You name it. (128k required)

SOFTLOK V2.3.....£14.99

The most comprehensive Speedlock tape to disc transfer program available. This easy to use menu driven program will allow you to transfer many of your tape games to disc with minimum fuss. With over 100 verified transfers this has to be the utility to use. (CPC Attack 6 - 98%) (128k required)

SMART PLUS.....£14.99

At last an art program that lets you make full use of the Plus ranges extra colours. Create amazing overscan pictures with a palette of over 4000 colours to choose from. What's the point of a super Plus machine if you can't stretch it to its limits? (Also available on tape)

THE ULTIMATE SPRITE SEARCHER.....£7.99

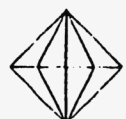
Extract graphics from games (not only CPC ones!), with this easy to use and fun program, save them on your CPC as screens, Z80 source code, or Art Studio windows. Even better with Hackit or Multiface. Comes with free machine code sprite routine. "A very valuable addition to the world of the CPCs" (CPC User 43) "This is an excellent program and I heartily recommend it." (WACCI 74)

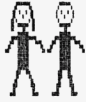
BALL BEARING.....£5.99

Liked the PD game Croco Magneto? If so you'll love this scrolling puzzler, from the author of Eve of Shadows & Fluff, which combines the playability of Croco with super graphics and loads of extra features at a bargain price. (Also available on Tape at £3.99)

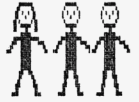
PIPELINE TUTORIALS.....£3.00 Each

Get your hands on "The best machine code guides so far" (AA 91-95%) or our BASIC tutorials which "From a beginners point of view these guides are excellent" (AA 98) Please write for a full list





WHO'S WHO



EDITOR: CLIVE BELLABY, 12 TRAFALGAR TERRACE, LONG EATON, NOTTINGHAM, NG10 1GP
Telephone 0602 725108 (8.00pm to 9.00pm)

SUBSCRIPTIONS & TREASURER
Paul Dwerryhouse (0244) 534942
7 Brunswood Green, Hawarden,
Deeside, Clwyd, CH5 3JA

INSPIRATION
George Ho-Yow
6 Monmouth Road, Hayes,
Middlesex, UB3 4JQ

VERY BASIC BASIC
Alan Tilling
65 Lawrence Road, Altrincham
Cheshire, WA14 4EL

FAIR COMMENT
Mike Lyons (0942) 59942
85 Leigh Road, Hindley Green,
Nr Wigan, WN2 4XF

FILES AND DISCS, LD A, CODE & MORE
Clive Bellaby
12 Trafalgar Terrace, Long Eaton,
Nottingham, NG10 1GP

WACCI HOMEGROWN DISC LIBRARY
Patrick Dunne ** NEW ADDRESS **
Flat 8, Trafford Lodge,
5 St Marys Rd, Leamington Spa, Warks

THE 'ZENE
Derek Hyland (Amsof PD)
Lissanly, Cloyne,
County Cork, Ireland

THE COMPETITION SPOT
John Bowley (0733) 260616
97 Turrington, Bretton
Peterborough, PE3 9XT

PD LIBRARY - DISCS 1 TO 18
Patrick Dunne ** NEW ADDRESS **
Flat 8, Trafford Lodge,
5 St Marys Rd, Leamington Spa, Warks

DISCOUNTS
Stamper J Metcalfe (0742) 461743
32 Moorwoods Avenue, Chapletown,
Sheffield, S30 4WA

BOOK LIBRARY ** NEW ADDRESS **
John Bowley (0733) 260616
97 Turrington, Bretton
Peterborough, PE3 9XT

PD LIBRARY - DISCS 19 TO 36
Stuart Gascoigne
24 Ketch Road, Lower Knowle
Bristol, BS3 5DQ

WACCI BB
Closed Until Further Notice

CPC ESSENTIALS
Chris Green, C/o WACCI
12 Trafalgar Terrace, Long Eaton,
Nottingham, NG10 1GP

PD LIBRARY - DISCS 37 TO 54
Ian Parker,
24 Oxford Drive, West Meads,
Bognor Regis, West Sussex, PO21 5QU

WACCI REVISITED
Paul Dwerryhouse (0244) 534942
7 Brunswood Green, Hawarden, Deeside
Clwyd, CH5 3JA

TAPE LIBRARY
Arthur Cook (0903) 206739
Brympton Cottage, Brunswick Road
Worthing, Sussex BN11 3NQ

PD LIBRARY - DISCS 55 Onwards
Doug Webb
4 Lindsay Drive, Chorley,
Lancs, PR7 2QL

WACCI SUPPLIES: Frank Frost, 4 Rectory Close, Wooton, Ryde, Isle of Wight, PO33 4QB - Phone (0983) 882197

Blank 3" Discs (Maxell) £14.80 per 10 or £1.50 each (minimum order 2) . The Alternative Firmware Guide (inc disc) £7.95



SUBSCRIPTION FOR



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) ●
WACCI, 7 Brunswood Green, Hawarden, Deeside, CLWYD CH5 3JA

You're almost at the end!

ALL FORMATS COMPUTER FAIRS

HUGE SAVINGS FOR ALL COMPUTER USERS

Thousands of bargains! Computers, games consoles, printers, business software, monitors, games, public domain, shareware, components, user groups, joysticks, modems and much more.

Jan 22	North East	Northumbria Centre, Washington, Dist. 12
23	West Midlands	National Motorcycle Museum J6 M42
29	Essex	Brentwood Centre, off A12 J28 M25
30	Surbiton	Southborough School, Hook Road
Feb 12	North West	Haydock Park Racecourse J23 M6
13	West Midlands	National Motorcycle Museum J6 M42
26	North East	Northumbria Centre, Washington, Dist. 12
27	Glasgow	Woodside Hall, St. Georges Cross
Mar 6	West	Brunei Centre, Temple Meads, Bristol
13	London	Toworth Recreation Centre, A3 Surbiton
19	North West	Haydock Park Racecourse J23 M6
20	West Midlands	National Motorcycle Museum J6 M42
26	North East	Washington Leisure Centre, District 1
27	Glasgow	Woodside Hall, St. Georges Cross
Apr 9	Essex	Brentwood Centre, off A12 J28 M25
10	Cardiff	University Union, Park Place
16	North West	Haydock Park Racecourse J23 M6
17	Belfast	Ulster Hall, Bedford St.
23	North East	Washington Leisure Centre, District 1
24	West Midlands	National Motorcycle Museum J6 M42
May 15	West	Brunei Centre, Temple Meads, Bristol
21	North West	Haydock Park Racecourse J23 M6
22	West Midlands	National Motorcycle Museum J6 M42
28	North East	Northumbria Centre, Washington, Dist. 12
29	Glasgow	Woodside Hall, St. Georges Cross
June 11	North West	Haydock Park Racecourse J23 M6
25	North East	Washington Leisure Centre District 1
26	West Midlands	National Motorcycle Museum J6 M42
July 16	North West	Haydock Park Racecourse J23 M6
17	West Midlands	National Motorcycle Museum J6 M42

£1 OFF
adult admission
 with this voucher only one voucher per person. Redemption value 0.00001p. THIS VOUCHER CAN BE PHOTOCOPIED AND REPRINTED. Admission £3 with this voucher.

£1 OFF
adult admission
 with this voucher only one voucher per person. Redemption value 0.00001p. THIS VOUCHER CAN BE PHOTOCOPIED AND REPRINTED. Admission £3 with this voucher.

ADMISSION: £4 (adults) £3 with voucher £2 children £2 all after 2pm. Disabled wheelchair users FREE. All fairs are from 10am till 4pm. Stands are available from only £60 ring 081 856 8478. Sole Proprietor of Fair:- Bruce Everiss