The Forty-Third

WACCI

May 1990 Vol 5 No 5 £1.50 Europe £2.25 Overseas £3.00

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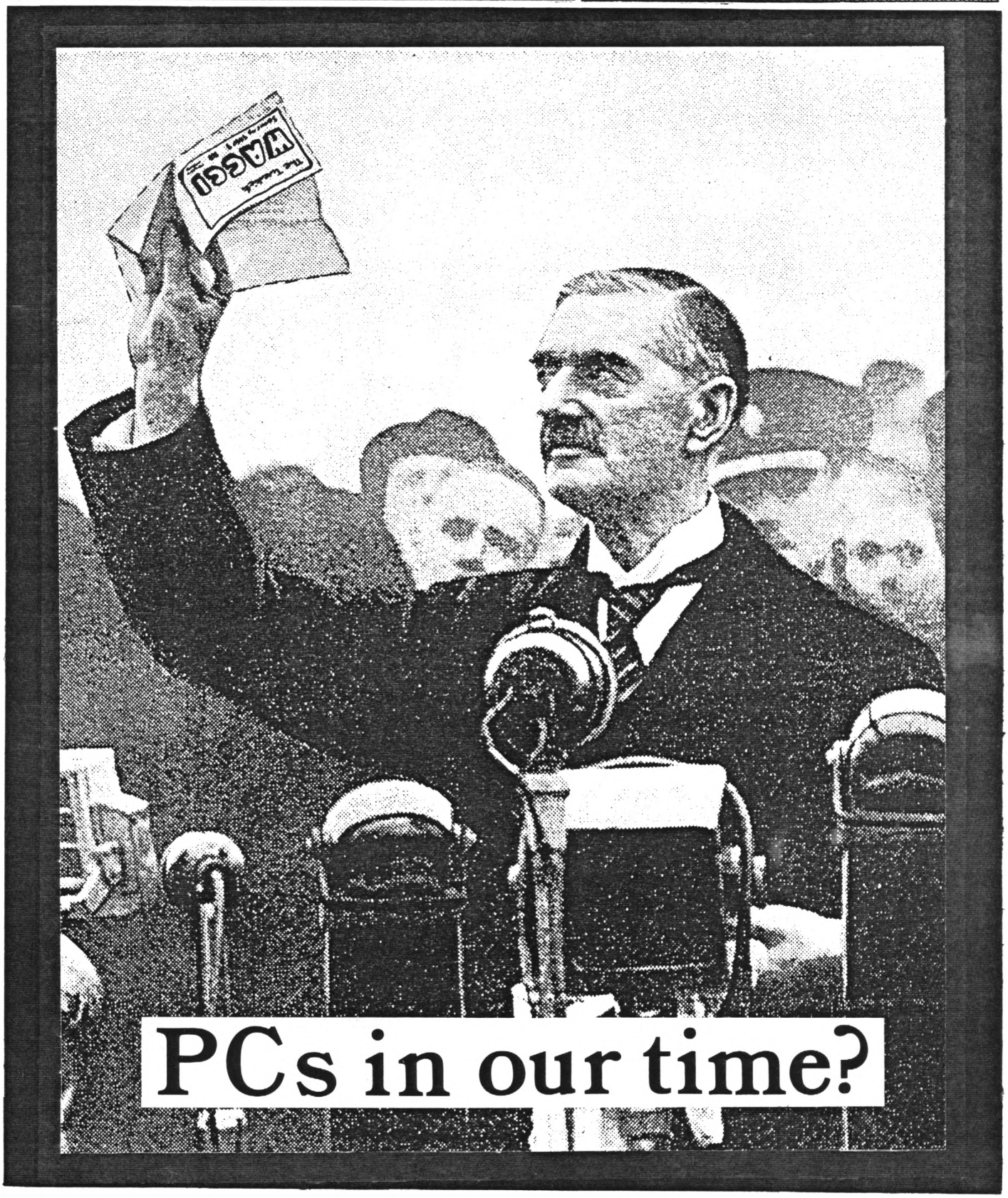

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PRINTED BY ..... RPM Reprographics
DISTRIBUTED BY ..... Accident

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WACCI was conceived and founded by

JEFF WALKER

Hi Gang. Here we are again. Phew, is it hot or is it hot? It's a good job we're not Eskimos... we'd all be homeless by now. It would be a case of having to leave the fridge door open to keep a roof above your head. Anyway, onwards and upwards...

SUMMAT MISSING

Yes, you've been asking for it, so this month we've finally done the *Almost* Definitive Guide to Disc Operating Systems (Note that I say *almost*, there's bound to be more to be said sometime in the future.) Anyway the ADG to DOSs has meant that we're short of space in the magazine, once again, this month.

Don't get me wrong, I'm not moaning, I'd rather have too much material to include in an issue than not enough but it does mean that I've had to carry-over some columns to next month.

This means that the *BAD NEWS* is that Paul Dwerryhouse's *"Strings'n'Things,"* Auntie John's *"Basic Machine Code,"* Glenn Carey's *"Last Laugh,"* Ken Walker's *"SimSpot"* and a couple of other articles will not appear in this issue. The *GOOD NEWS* is that these items have already been spell-checked, edited and formatted in the WACCI house-style. This means that half of the next issue is finished and should (famous last words) be with you in the middle of next month.

Poking in The Library is missing this month for two reasons... Firstly Stuart Munro sent in a 3.5" disc which was full of PD CP/M programs which we here at WACCI Towers had never seen before. Once I'd transferred them all over to 3" discs I showed them to Joolz and she had the equivalent of a *"brain overload."*

So it was that fact, coupled together with impending prospect of taking twenty-nine school-kids on a 'school-trip' to the Isle of Wight for a week which meant she didn't have time to write a *PiTL* column this month.

Therefore, Joolz didn't have time to update the WACCI FSW lists either. I've tried my best to compensate for this laid-back lady's lackadaisical life-style. Consequently, if this month's *Thanx'n'Stuff* turns out to be the sort of column that PiTL should have been, you know who to blame.

All of this writing stuff leads me nicely on to....

WRITING FOR WACCI

A number of people have written in to me this month basically saying *"Steve*

I'd like to write an article for the magazine and consequently become rich and famous. I've got this idea for an article but I don't think many people would be interested... etc etc."

Well listen, don't just sit there, send it in! Cunnon, I don't have a monopoly on the art of writing boring articles, you can join me as well!

Seriously though, you'd be surprised how many of the articles that have appeared in WACCI nearly never made it because their authors thought no-one would be interested in reading them.

Of course there are people who want to hear what you are doing with your computer. They may not want to do it themselves but they might like to find out how to do it if they ever needed to do so. For example:- I can't afford the radio equipment to be able to go *"On-Line"* over the airwaves but I'd give anything to find out how it's done and what's available.

Take the subject of how you go about writing a "game." I'm sure that I'd never ever want to play (cough!) or even write a computer game but I'd love to know the mechanics about how the daunting feat is achieved.

So, if you have an idea for an article (or even a series perhaps) tippy-tappy it onto a disc and send it in to WACCI HQ. Don't get upset if it doesn't appear in the very next issue of WACCI after you send it in, as I've said before, thankfully we have a waiting list.

GAMES DISCS

Now we all know that WACCI readers aren't interested in games software don't we... *Err* well actually it seems that they *ARE.*

Yes, as I've been copying your loose software orders I have noticed that they nearly all contain some WACCI Homegrown games programs.

Now I know that you don't actually play these, of course not, you really only want them to study other people's programming techniques. So what I've done is collect all the games together on four discs and called them The WACCI Games Discs 1 to 4 (what an inspired name eh? It took me a whole day to think that one up.)

Anyway, in the absence of *Poking in The Library* and FSW list update here is a summary of the disc contents.

GAMES DISC 1

Space Invaders, The Prisoner's Dilemma Game, XDraw, Loot, Trivia Quiz, Zener Cards, Pairs, Jigsaw1, XOX, Breakout, Dripzone, The Dripzone Cheat, Sheepdog, Othello, Starfire, Edbutt, Tee-off, Three Dimensional Maze, Path Finder, Lock'n'Key, Magic Squares.

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<<He LOVES a chat but nobody seems to call him up -Ed.>>

PETER CRESSOLE (01) 878 0391
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Protext, Promerge, Utopia and nukes (amateur status only.)
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PAUL DURRYHOUSE (0244) 534942
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<<The author of WACCIWORD and WACCISPELL, errmm... -Ed.>>

RAY BARROW (021) 4294233
(Birmingham)
MasterFile or MasterCalc (the original versions) and Tasword.
<<Another Looney -Ed.>>

BILL LAWSON (0239) 820212
(Newport)
Basic, m/code and hardware and someone to talk to generally.

<<This WACCI Helpline Service is provided, on a purely voluntary basis, by these fearless WACCI members for the benefit of other WACCI members. Please use it as the FIRST option for a CHAT, HELP, or PANIC STATIONS! rather than calling our very busy WACCI HQ. If you do call a HelpLiner, on this list, please do it (unless specified otherwise) ONLY between 7pm to 9pm.

In addition, if I get any reports of this helpline being abused by software pirates I will scrap it without any further discussion - Ed.>>

GAMES DISC 2

Bomber, Pontoon, MPC, Snakes, Diamond Miner, Pacplant, The Pacplant Cheat, Star Chase, Grid Warrior, Quiz, Jigsaw2, UFO Escape Gomoku, Tunnel Dive, Hotrods, Monopoly, Sketch.

GAMES DISC 3

Caverns of Skeletor, XSun, Go, Wild, Fruitrun, Darts, Jigsaw3, Backgammon, Beetlemania, Masters of Midworld, Championship War, Draughts tutor.

GAMES DISC 4

Three Dimensional Noughts and Crosses, Escape from WACCI HQ, Life, Shifty, Four in a Row, Missile Command, Write it Right, Dominoes 1, Dominoes 2, Othello, Oz, Patience, Fruit Worm, Pharaoh, Chess Games, Spellbound, Crazy Maze, Englebert, Diabolo, XWord.

AJ STRIKES BACK

As if that wasn't enough, our very own Auntie John has put together a second concept disc called The Twilight Zone.

It has digitised pictures of AJ and his chum Green, sampled speech, yet more pictures of AJ, *Space Invaders, Escape from WACCI HQ, 3D noughts and crosses, Starfire,* another picture of AJ, *Chat, The Prisoner's Dilemma Game* and lastly that all important picture of Auntie John.

AND THERE'S MORE...

OK, so I think that's upset the *"I don't play games"* faction enough. Just to show that life is not *all play and no work* you'll be pleased to find out that I've put together another CP/M disc together containing more business programs and I've called it... CP/M Disc 10 - More Business (that one took me two days to think up!)

CP/M Disc 10 contains VDE266, the word processor (has the Peter Ceresole stamp of approval.) Finst, the cardbox filer system. Andybase, the database. Sideways, which prints out spreadsheets sideways. Newccp, which adds new commands to CP/M. Print, Edit and finally the perennial NewSweep.

FUTURE PLANS

As if that's not enough I plan to start putting together other FSW Homegrown compilation discs, the first of which will be a collection of business programs. Now what should I call that? *Hmmm.....*

RETURN TO SENDER

This month I've been forced, by Joolz, to include a grovelling apology to all of you who have sent programs in on disc and have not yet had them returned.

I am sorry, honestly. I have this irrational fear concerning hoopy stuff on discs. If I see a proggy that I like and intend to include in The FSW Library I worry that once I have made a copy and sent the disc back I will lose or corrupt the copy.

If you have sent a disc in and are wondering why it wasn't sent back within the week, don't panic, it will be returned.

And speaking of which... Mr Fecher, could you send me another copy of your MATCHIT program as I've *errr....* managed to corrupt the only copy that I made of it (see what I mean!)

JOHN HILTON

I'm sure that many of you know John through his letters to WACCI and by his work on the WACCI Helpline. He has been an enthusiatic club member for a long long time now. His sub expired last month and he contacted me to say that he isn't going to renew it because he is going blind. He has a rare "wasting" illness of the muscles in his eyes which focus his eyesight.

Naturally I'm choked to find out about John's plight and for our part here at WACCI HQ, Peter, Joolz and I will be reading out Fair Comment and Thanx'n'Stuff every month onto a C90 audio cassette tape and sending him a copy.

What I'd like to know is if there is anyone else out there who would like to volunteer to do something similar with some of the other WACCI columns.

I'd also like to find out any information that members may know about organisations that transcribe jounals to tape for the partially sighted or blind.

John's condition is doubly tragic when you find out that he is employed as a computer operater. At the moment it is only his ability to touch type that his keeping him in work.

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FAIR COMMENT

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NETWARE

Dear Joolz, two of my fingers are on your list of Fair Comment typists. Will you confirm or otherwise advise whether this Tasword effort is satisfactory?

Next, a plea. Against my name on said list please can you scribble "Not till after the sailing season, say mid-October"? Apart from managing my own mini-cruiser, it's time No.1 grand-son took to the water. As we seem locally to be short of experienced (in my case elderly) safety boat crew:- that is assisting dinghy racers who are experimenting with the mast and sails under the water rather than in the conventional position. Much obliged.

Now to... diversification of the magazine. As I understood him, Steve was concerned primarily as to what happens when our Amstrad range becomes obsolescent. Surely, with this in mind we should be concentrating on what we should then be using to supplement our existing machines?

For my own money, the PC range seems, like the everlasting Cobol, to be so established that it may well go on ad infinitum. However, what I would like to see are comparative reports on the likely machines:- PCs, Amigas, STs, etc listing the facilities of each and not trying to arrive at a 'best buy'.

On the proposition that most WACCI members are, like me, helpful and friendly may I float a way-out idea.

Before I retired and was in the depths of commercial computing, we tried to ensure that we could run important systems on another machine in-house. For so-called vital systems we arranged external back-up in case of local machine failure.

Now I know the Amstrads are remarkably reliable-I have had but one disc drive failure in three years- but wouldn't it be nice if I could find another machine within a few miles whose owner was amenable to running a few programs. I am excluding game-playing from this but most of your readers seem to have a serious, if hobby-wise, use.

In my case this is, on a monthly basis, 'reducing' measurements of sunspot positions to solar longitude and latitude for submission elsewhere. Now manually this is tedious, inaccurate and liable to error, while by computer it's a doddle. What chance of setting up an informal system to cover machine failure?

And finally, please find enclosed two advertising sheets found within our freebie local paper. Perhaps Peter Creosote would like to hang them over his work place as terrible examples of mixing type faces.

And ultimately, please find enclosed paperwork and cheque to cover renewal of magazine subscription. Sincerely.

Peter Clark
34 Alton Rd
Poole
BH14 8SW

<<Dear Peter- Glug glug, okay, not till October. The Tasword file is perfectly fine.

I think *OMG*'s idea was that as we share a disc format and an operating system with the PCW and there is a whole lot of them out there then in unity might lie strength. Mind you if any WACCIites care to comment on their experiences with other machines- well, we're always happy to hear from you (a sure way to bring a tear to *OMG* and Peter C's collective eyes is to do an in depth piece on the ZX 81.)

The machine backup network sounds like a possibility, what do you all think? It would mean putting your full names and addresses when you write in. If you want us to, say so in your letters and we'll do it.

Thanks for the free sheets you are correct; sea green, I have passed them onto Peter Ceresole *-Joolz.*>>

SINGIN' THE BIG BLUES

Dear Joolz (and *OMG*) For a variety of reasons I have to upgrade (or is it down?) my trusty Arnold to a PC. Therefore i have the following stuff to sell - would you be kind enough to advertise it for me?

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Books on Amstrad CPC's

Any reasonable offers:-
Telephone 021-525-1962
John Thain
139 Wattle Road
West Bromwich
West Midlands

<<Sorry to see you go, John and have fun with your PC. You do know, don't you, that MS-DOS is just CP/M with new system messages *-Joolz.*>>

THERE WAS A YOUNG MAN CALLED MARTIN

Dear Joolz and *TOF. TOF? (The Old Fart* - your description... not mine) First of all, many thanks to all those WACCIites who have kindly offered their assistance regarding my using the MP2 modulator with a standard TV set. Would I "moan?" (Gordon Ross - WACCI 39) no, not me Gordon! AJ - I'm still waiting for the info! (AJ's Diary - WACCI 36.) Also Tony Buncher from Bideford (WACCI 40.)

In the end, I was in Dixons of

Woking a while ago and I happened to ask the salesman if he had any colour monitors for sale. It turned out that he did and I got one for £69.99 - Doesn't it look great in colour (the screen I mean!)

Your reply to Al Coopers' letter (WACCI 38) asked if aluminium foil did anything to stop X-Rays. I pass through Airport Security about twice each day and my experience with them is that if they cannot see through it, they just wind up the power until they can! To block out X-Rays completely, you would need a lead box (not the easiest of things to carry about your person.) Aluminium foil will not stop X-Rays, at Airport Security check-points anyway and I would presume that the Post Office would use the same principles.

Include the PCW in WACCI? Yes, why not. As already said by many of your readers, it already has a lot in common with the CPC.

I wasn't very keen on the PageSetter II/Star LaserPrinter 811 example in WACCI 40. It certainly looked very professional (now I'm not saying that your pages don't look professional Joolz) but I think it was drifting towards the more "Glossy" and "Unfriendly" mags that are about. Stick to the usual and you will get my vote every time.

Now, only read the rest of this page Joolz if you are broad minded, otherwise hand it over to TOF and you continue to read page 2, I wouldn't want to offend you!

And now for a little ditty:

"In the Garden of Eden lay Adam...
<<There's a lot of stuff here I don't quite understand which finishes up:->>
And unless I am wrong
you expected this line to be crude."
<<of course I didn't, Martin.>>

OK, crudities over, I've enclosed an order for some PSW goodies, together with a bit on the top to cover postage etc and some padded bags (I do like padded bags, it's like that plastic bubble foam that's used to pad delicate items that you send through the post, I can sit and "pop" those little plastic bubbles for hours on end... I'm very easy to please you know, or so my three children keep telling me.)

I've also enclosed a couple of the pens that we give away to passengers on Concorde for you and TOF. The fittings are finished in 22 carat gold, so you can wave it in front of all your admirers when you are both signing autographs.

Finally, (yes, I will finish soon I promise) I've just bought (invested?) in a modem and am now the proud owner of a Prestel Mailbox (mind you, I haven't a clue how to use it) so if anyone at WACCI Towers, or any other WACCIites wants to leave me a message (all jokes accepted but no swearing please) by all means do so, my number is: 999000704. All the best.

Martin R Dew
Liphook

<<Gee thanks Martin, except that *OMG* doesn't know how to write any more- at least not with a pen [wozzat?-Ed]. I'm glad you weren't bowled over by the Laser pages, because we can't afford one. Pop pop pop *-Joolz.*>>

TO ADVERTISE IN WACCI
RING
(081) 898 1090

SAY YOUR NAME, DO NOT SAY HELLO

Dear Joolz, this is a complaining / cringing letter, depending on whether the fault is mine or *OMG*'s (This always translates in my mind as Orl Mighty God. But will this give him delusions of grandeur)?

In January I sent an order for some software and a disc box. You printed my letter and sent the software but no disc box.

After the last edition of WACCI I had an awful thought, Perhaps I was one of the people that *OMG* was going on about and hadn't plastered my name and address over everything.

So here's another software order and please can I have my disc box.

PS. Has this come out in the required 38 column? I'm using MO II as I still haven't got to grips with VDE, hence my order for CPM 116. P.P.S. I've just read April PiTL. Its OK. Joolz, you're definitely not a football pitch.

John Walford
Redditch

<<Good, I'm glad of that. The MO II file was no real problem for the Gruesome Twosome who have been unstoppable (and unbearable) since they cracked MD-DOS. Through his deep smugness *OMG* says that yes, or maybe no, you did leave your name off the box. Here's a message from the horse's.. err.. mouth.

[Hello John, this is a general point for all members; don't send your discs into WACCI in plastic boxes (or sleeves) because, sure as taxes, they will be lost. Use just a jiffy bag, put your name on the disc and all will be well. The discs are quite strong enough and postage is cheaper too.- Ed]. All right, John, geddit? *-Joolz*>>

DING DONG MERRILY ON LOW

Dear Joolz. Mick Baker's letter (WACCI Dec.p5) and Alan Tilling's "Passing Thoughts" (ibid p18) called to mind my earliest contact with computers.

In 1955, as a metallurgist at English Electric research labs, I was responsible for a lab where the thin magnetic alloy "horseshoe" stampings were heat-treated for the high-speed memory drums being developed. The computer itself, (a LEO clone?) was as big as a trancar.

The only thing I remember about it was one Christmas when someone programmed it to play carols! The computer work was later moved to Kidsgrove, where some of the employees became involved in the formation of ICL. At that time I still used a Brunsviga (mangle-type) calculator, for x-ray crystallography.

WACCI grows even more interesting. This may be because I read all the letters (ignoring the non-deliberate spelling mistakes) PITL (with Joolz) and most of the articles, so I'm just starting to understand a little.

My only criticism is of the "PSW Library lists". Because I save my

WACCIs, I like to scrap the old lists (to reduce the bulk) but can no longer do this without cutting up the mag. when the next arrives. Also as I keep a register of all my software, using the CPM/AMS numbers (in the case of WACCI) it is annoying to find a number changed when a title is deleted for any reason (eg. AMS178 was Accounts 20K, now is Wild 15K) as I have to redo my lists. Why not leave blanks, please, if deletions are necessary?

May I say how useful I find your "homegrown" software especially "Straight" (AMS150.) This can, for example, be used to estimate the miles/litre (or gals) you get from your car or 2-wheeler. Plot the number of miles you clock each time your gauge reads "1/2 full" for every (say) 20 litres you get. Do this about 10 times to minimise any error in reading the "1/2 full" mark. The prog immediately reads off the M/litre.

Can you help with any of the following?:-

1. How do I use Spell Check (CPM 053) with Amsword? Are they incompatible, or am I missing some key?
2. How do I print graphs etc. using my Seikosha AP-80A printer (bought in 1982 to use with an Acorn Atom computer but never used for graphics.)

   According to the manual (yes I've read it) this printer is a "parallel interface Centronics type" using uni-hammer impact print with a 7x5 dot matrix and has the graphics command "9LP1". I have tried many screen dumps, including those you offer and have just ordered another from the Users' Club but am not too hopeful as a reply by David Dorn in 'applications advice' in Amstrad User mag (April) suggests I need to buy a different printer.
3. I bought the Basiart disc and find the !instruct command prints out as a scrolling display confined to column 1. When I attempt this using the Amsword word-processor or MSWP with the 'text' file I get the same result. Am I missing something or have I got a corrupt disc? A letter to Basiart three months ago has brought no reply.
4. Will 'Sort' (CPM 033) put words or lists into alphabetical order?
5. Do tell me- what is a 'Mandelbrot Set' (AMS 048)?
6. What is the address of Maplin? Gladys Pugh won't tell me! Perhaps they don't sell hardware at holiday camps! Best wishes to each.

Wilbert George
Swansea

<<Right, Wilbert, I've put your grouse about the FSW lists to He Who Must Be Defied and he tells me that he got so many complaints when they were separate that he's built them into the magazine now- surely they don't take up that much room? As to reusing numbers when programs are deleted, unless we did, in a very short time there would be gaps all over the place. I think it's a question of the lesser of two problems.

Now for your other queries:-

1. Spell is a CP/M program. It will spell check a saved Amsword file (which is an ASCII file) without trouble (run CP/M first and follow the instructions in the .DOC file.)
2. I'm afraid that short of a heroic bit of hacking, David Dorn is right. You need another printer.
3. We don't know. Sounds odd but not like a mistake by you, or a corrupted disc either. Anybody got any ideas?
4. We don't know for sure. Why not get it and find out? An extra 16p on your next order?
5. It's the plot of a set of points defined by a very fashionable equation. There are many many books about it and the .DOC file for AMS 048 explains it fairly simply (but not that simply.)
6. The telephone number of the Maplin store in Hammersmith is 081-748 0926. Call them and ask.

We all love it when people say that they're enjoying WACCI- that's the idea. Thanks for writing -*Joolz*.>>

WACCI'S NEW PHONE CODE IS (081) 898 1090

BIG SCREEN ENTERTAINMENT

Dear Joolz. I have just seen a screen for an adventure program called Knight force, with the remarkable (to me) ability to use all of the monitor screen, including the border and I wondered if you or anyone else (Aj?) could possibly show me how its done.

Thanks for sorting out my unaddressed disc for me. The enclosed file is written using Tasword. I hope that this is OK (How do you know what word processor writes the discs you receive, do you have to use Discology or its ilk?)

Please find enclosed a cheque for three pounds for some loose software, keep the change for stamps. I would like to order AMS-090 calculator (21K) AMS-166 LWA (7K) AMS-167 PDG (3K) AMS-200 WAR (13K) and CPM 036 LBRDISC (16K.)

I would also like to say how much I enjoy the mag, keep up the good work. I hope that this is the correct format for disc letters.

Martin Larkin
Liverpool

<<Thanks Martin, the letter format is fine but even better if you don't have any left margin at all. Tasword files then come out as straight ASCII, which is very easy for me to handle.

Sometimes there are some very odd formats indeed but using Protext (as we do at Schloss WACCI) you can easily see all the hard spaces, tabs and returns and there are very few formats that can't be fixed using search and replace. If all else fails I give it to *Huey and Dewey* and they squeal with pleasure for hours. It seems to me that they're very easy to please but then they are men...

Different word processors produce files that look different:- for instance Tasword files have a hard return immediately at the end of each line whereas VDE puts a space in front of the return. I must say that we're not very scientific about it, we just turn them all into Protext files and keep on keeping on.

As to how you fill the whole screen including the border, you're talking about real programming...

Many moons ago John Valentine wrote a program that uses the whole screen, vertically (top and bottom borders.) Take a look at SDM (AMS-125) it is the big screen operating system that contains several programs (such as Globe, Di-Sync, Circleline etc) which have been converted to take advantage of the bigger screen area.

In addition, SDM also has the following built-in commands:-

COPYSDM - Copies SDM to another disc.
DEBUG,[filename] - Loads the file [filename] for debugging.
DIR,[filename] - Catalogues the disc using [filename].
DRIVE,[drive] - Switches to drive [drive] (A or B.)
ERA,[filename] - ERAses [filename] from the disc.
PRASC,[filename] - PRints ASCII files to screen/printer.
REN,"[oldname],[newname]" - RENames file [oldname] to file [newname].
RESET - Disables SDM large screen.
RESTART - Restarts SDM.
USER,[n] - Sets up USER Directory [n] (0 to 15.)
CAT - Catalogues the disc.

If AJ has the time I'll see if he has anything to say but the dear boy is terribly busy these days, what with living in Macclesfield and writing all those articles in (what was it?) Amiga Computing. Hmff -*Joolz.*››

A LETTER FROM A WOMAN (YEAH!)

Dear Joolz. Hi! Many thanks for the "Yes Chancellor" which arrived today. I've already managed to have a financial crisis before an election for each of the three games played (John Major your job's safe!)

As this is the first time I have written to you, I hope I am doing it correctly? I first ordered WACCI after reading about Public Domain software in the February issue of Amstrad Action. I have to admit that it took a little getting used to and there is quite a lot of it I haven't got a clue about but I'm sure you'll be pleased to hear that I have sent you a six months subscription.

I first started to use the Amstrad 6128 at college as a Word Processor with Protext to produce student handouts. Then towards the end of last year I took the opportunity to buy the machine I had been using.

Almost straight away Peter Ceresole began his Playing with Protext series in Amstrad Action and I was delighted to customize my CPC's function keys with a similar "Disc" program.

I then followed his advice and bought "Utopia," followed this month by Promerge Plus. I do have a couple of queries and would be grateful if I could ask his advice through your column? Please forgive me if I'm being terribly dim...

First, "Disc" loaded beautifully until I installed Promerge Plus; now it changes the colour of the screen but then gives the message "NEC. not found". I guess this is because Peter uses an NEC printer and I have a DMP2000? I think line 110 needs to be changed but I do not how to do this.

Secondly, I have Mini Office II with names and addresses in the database, is it possible to use these in Protext or will I have to put them in again to use Promerge Plus? I notice in the FSW listing there is a database program called Andybase would it be possible to use this with Protext? If so, how do you get it in?

While I have a system I am very happy with I am sure I am not realising anything like its real potential, I would be interested to hear any advice and/or ideas about how I can do this.

All too often we hear that people are very quick to complain when things go wrong but rather slower to praise when things go well. May I say a "thank you" to MJC Supplies from whom I received my copy of Promerge Plus the day after it was ordered and a number of other things within a couple of days of ordering. They were also extremely helpful when I rang up with an enquiry.

I was very interested to read Rod Lawton's letter in the March WACCI about obtaining a colour monitor from Comet as I would dearly love to get one. Unfortunately my local Comet said they did not sell monitors on their own, even when I showed them Rod's letter. Why are they so difficult to get? If any of your readers have one in good condition to sell I will pay a fair price.

Well I think that will be all from me for the time being, except to say I am willing to volunteer to type in letters on to disc, if you let me know exactly what to do.

PS. I am enclosing a Return label and postage along with an order for some FSW. Bye for now...

Jenny Martin
Orpington

‹‹Hello Jenny, wow, how nice to get a letter from a woman. WACCI Towers is short of sensible people... Having said that, here's Peter C. (By the way, did you know that "Playing with Protext" originally appeared in WACCI last year?)

[Hi Jenny. Yes, the "disc" program does try to load a printer driver called "NEC" but if it can't find it it just carries on regardless. The DMP 2000 will work fine with the built-in driver, so you can either leave the program alone and get that irritating but harmless message, or eliminate line 110. Remember that if you do later write your own printer driver (called say "dotty") all you have to do is put in a line like 110 that says '!P,"pr dotty".'

The best way to get to grips with Protext is to play with it with the manual open, read magazines, especially WACCI and just let time pass. Just ask yourself what you want the program to do and then work out how it might do it. If you get stuck, write in and ask, or use the WACCI telephone help lines. Honestly, noone will think you're being dim- we've all been there. I took a long time to get beyond the most basic use of Protext and it was all fun. I knew absolutely nothing about computing then and I know about one percent more now.

By the way, for word processing the green screen is vastly better than the colour monitor- much sharper.

Back to Joolz who is laughing too much to be healthy. -Peter.]

The reason I'm laughing is that *OMG* uses a colour screen and he and Peter

are always whittering on at each other about which is the better setup to use. Anyway, I hope that helps.

I asked the *Cocteau Twins* about your problem with MO II and they dived happily into the manual but it seems that there is no direct way of exporting the database files.

However, you *can* export them into the MO II word processor. If you do that and then save the file in ASCII format it will load into Protext and then you can see if you can fix it to the form you want.

I asked about Andybase but neither *OMG* nor Creosote have tried it with Promerge Plus the luxurious dogs use Masterfile, which does the trick.

Here at the Schloss *OMG* keeps the subscription list as a biggish (45k) Protext file with each entry (name, address and renewal date separated by commas) on one line. Promerge Plus reads and manipulates that file with ease and it doesn't need a database program at all.

Lovely to hear from you -*Joolz*.››

WOW- AND ANOTHER ONE!

Dear Joolz, Having read through the March edition of WACCI, (only a few days late) I noticed that there were no ladies amongst the contributors to Fair Comment. Having noticed this I now feel obliged to write in.

At the beginning of April I suffered withdrawal symptoms, not a WACCI or AA (May) in sight. However, in an attempt to relieve the condition, I had a second go at machine code (the first one failed when I realized I needed to know more Basic.)

I already have Mastering Machine Code on your Amstrad 464/664/6128 by Gifford And Vincent but the extra explanation given in Auntie John's Basic Machine Code series helped me a lot. The Z flag is now almost clear to me. How about some more? (Especially the F register.)

Aj also mentioned, in Part Two of his series, the assembler programs supplied with the CP/M system, I know about these but I can't work out how to use them. (For that Amstrad require more money.) Am I going to need the extra manuals mentioned in the CP/M Help files to make good use of machine code, or will WACCI's CP/M Disc 1 save me the trouble?

I would like to make one other point:- I have been reading WACCI for five months and I have once or twice seen a suggestion that a member obtain CP/M basic available in PD for PCW. If WACCI were to include PCW's, would we get access to more usable PD software? Finally I have only one word processor at the moment, Mini Office II, I can't get 38 column format, (never used a word processor before either, can you tell.) I've saved it to ASCII and Mini Office II file and hope for the best.

Linda Smith
Chester

‹‹Gosh it's Christmas- there's never before been two letters from women in a month. Although the Heavenly Twins are sweet (but PC does go on so and *OMG* has this terrible habit of...) it gets lonely at WACCI Towers.

I feel you're very brave, jumping into machine code. Also, you've just made Auntie John a happy man. He tells us that he might write some more Basic Machine Code and we're encouraging the thought by waving vistas of glory before him. Your letter should help the campaign a lot. Look out for another "Basic Machine Code column in the next issue of WACCI.

CP/M Disc 1 should contain all the assemblers etc. you might need and there should be information in the .DOC files. The CP/M Plus Handbook has a section describing the operation of the programs that come on the master discs. None of it comes easy, though.

Finally yes, there are PCW PD programs that we can use, although they are often set up for the PCW's bigger screen. But don't be mislead, CP/M (although very powerful) is positively user hostile. Certainly if we get more PCW owners on board (but remember that some of them are already with us) we will probably get wind of some more useful software.

Come on chaps- have you seen anything good out there?

Thanks for writing- and good luck with the opcodes -*Joolz*.››

FAIR COMMENT
9 SOUTH CLOSE, TWICKENHAM
MIDDLESEX TW2 5JE

AL KEEPS ON TRUCKING

Dear Joolz. It was with great delight this morning, that I pounced upon the familiar buff coloured envelope, before Goldie got his teeth into it. You should see my January issue, which arrived while I was out. It looks like a patchwork quilt, after being stuck together with "Ticky Tape".

How nice it was to get the April issue during April, even if it was in the last few days. Keep up the effort, you ARE winning. I wonder what is the proper date in the month for you to send out each issue. Perhaps you will soon catch up.

In the March issue, I noted your reply to Chas Watts; in which you mentioned the best way to prepare a ruler line for 38 column format. As a regular contender for a place in the Fair Comment Columns, I have always wished to send in my humble effort in the correct form.

I have always wondered how to start my ruler lines in the leftmost column and the idea of not puting an L at the left hand end of the Ruler Line, had never occurred to me. I went under the delusion that it was needed to set up a Ruler Line. You will see that I have managed to do this file from column 1, by starting as usual with the greater-than sign; and then simply leaving out the L and going on as far as column 38. I was amazed to find the Top Ruler Line appearing with an L at the start of it in column 1, as soon as I moved into the text area. I wonder if there are any others who did not know how to do that, or am I the only "L" plater in the business. Isn't Protext wonderful!

I have saved my Starter for WACCI correspondence at the head of this note and put my menu system onto the disc, so that you can see how I go about it.

I have a program called DISC which I run to configure my function keys and then it runs DISC2 which reminds me

what the keys are set to do:-

```
f1 = CAT  f2 = REN      f3 = ERA
f4 = L ME f5 = SETPRINT f6 = COUNT
f7 = L LT f8 = PR LP    f9 = ERA *.BAK
```

f4 will then produce a Menu (ME) of various starter files to allow me to do most any letter with ease:-

```
1/ LISBURN 'LECTRICS  My Business
2/ WACCI Letters      38 Format
3/ GREETINGS OF GRACE Church Letters
4/ General Letters    On A4 Paper.
5/ Small Letters      45 Format
6/ Sermon Notes
7/ Plain Documents    On A4 Paper
8/ Address labels
```

I also have a printer driver (LP?) and format template file (LT?) to go with each starter file, called and loaded by f8 (pr LP) and f7 (l LT) plus the format number and away we go. It's all quite automatic.

Please find my order for CPM Disc 8 which should include COBOL, it does, doesn't it. I have acquired MAXAM 1.5 and UTOPIA from ARNOR, with their May Birthday Offer in AA. This will then let me get stuck into the tutorials in WACCI and put my poor old mind into a right tangle between Auntie John's Machine Code and Uncle Clive's COBOL. I really must be mad; doing BASIC at the Lisburn "Tech." and these other two languages as well. I shall have to invent my own ALL (Allen's Learner's Language) before somebody else thinks of it. Perhaps that would be a bit much for an old codger like me.

In the April issue, I see a letter from Mr K P Williams of Polegate; in which he tells us that he has both 3" and 3.5" extra drives. I have the 3" drive which I got for use with my 464, before moving up to the 6128.

I have retained the 464 in case of breakdowns and I have been wondering if the DDI-1 can be pursuaded to work as a third drive in the 6128 system. I would like to hear how Mr Williams managed this.

I must agree with him on the question of further upgrading. The CPC 6128 is just so good that one would need to spend far too much money to improve upon it. I must also agree with him on the point about Phil Craven; in spite of some hard speeches of mine in the past, which Phil has probably read in WACCI, he was still prepared to advance all the help he could on the question of building my own ROMboard and therefore not buying a second one from him.

I must hurry on now, I have some repairs to do on the church bus, which suffered from a mini Strangeways type riot by the youth club kids. They rocked a loose seat back and forth until it eventually became unstuck altogether. The little horrors. I really should have fixed it before they got at it. A stitch in time and all that. Bye for now and God Bless,

AL "The L Plate" Cooper
Lisburn

⟨⟨Al, there *is* a beginners language and it's Basic. But I do love your start-up technique with Protext, it's very ingenious and it's always fascinating to see how other people make the machine do things.

The world is full of people who take time to get used to Protext ruler lines but I'm glad, now, to get your letters without a space in the left margin. Even better if you didn't use tabs, then I wouldn't have to do a thing to them... We can't use tabs in making up the columns in WACCI. But however they come, we're always glad to hear from you. Good luck with fixing the bus -*Joolz*.⟩⟩

DO YOU SPEAK C

Joolz ⟨⟨yup?⟩⟩ Here is an interesting bit of news that I picked up from one of the all too numerous 'Professional' Computer weeklies for Businesses. It concerns this Company that bought a £600,000 IBM Mainframe.

This firm is now asking for offers from anyone wishing to buy said beast since it found out that only 2% of its capacity was being used and that all the work could be done on a £3,000 PC. There is an obvious moral here, if only I could think of one. Perhaps it's saying don't buy a big one when a little one will do.

In the November issue (37) you printed a page headed 'USERLOG'. It was a list of users whose subs ran out within the three months from that issue. You (well perhaps Steve) said that it would be published quarterly, which meant the next USERLOG was to be printed in February. Nothing appeared.

I can only assume that the reasons for non appearance are similar to the reasons you gave me about putting a membership figure on the front, that as the membership continues to grow so fast, there are now too many names to compile a USERLOG on just one page and therefore would be depriving us of more pages of goodies.

You can ignore most of the hand written letter I sent asking when the March issue of the mag would arrive, since on the day I posted it guess what turned up? Still, my question about when my subby runs out still stands, ie. the letter label says:-

YOUR SUBSCRIPTION EXPIRES IN:- APR 90

Does this mean the last WACCIzine I get under my current subscription is the April issue? Still I did send in a new subscription payment but of course I'm not sure when that will run out.

Please find my latest offering for the FSW Library on this disk. This time its an AMSDOS Screen Squeezer program called 'SQUEEZE.BAS'. It's a Basic front end to the machine code that actually does the squeezing and unsqueezing. What does it do? Well, it compresses screens on average by about 25% and therefore saves about 4K of valuable disk space. Also it reduces loading and saving times.

The ASCII document SQUEEZE.DOC explains in detail my method (a form of Run Length Coding) and two other ASCII files SQUEEZE.ASM and UNSQUEEZ.ASM are the assembler listings of the machine code used. The demo opening screen SCRNSQZ.SQZ is just 4K long rather than the usual 17K, so big savings can be made when the screen is quite simple.

My attempt compares very favourably with other screen squashers but mine

gains on some from the fact that the MODE, INKs and the screen unsqueezer code are saved with the file and so no other program is needed for the screen to be reconstituted.

I think that Clive Bellaby's COBOL programming section is very interesting and a good insight into this useful language. Many readers won't know that at this moment in time, it is still the most widely used language in the world (mainly from its use in the business environment.) I feel that I must point out a small difference I experienced from that of Clive on the missing full-stop syndrome in issue 41, assuming he's using the same COBOL version as me (it should be as I got mine from WACCI!) The compiler only reported 2 errors if I left off the period where he said.

The compiler did report many errors, though, when I left off the dot after the very first line. In fact my 6128 didn't stop producing an error list, so after 30 minutes and over 7000 errors I aborted the Compiler!

'C' will soon overtake COBOL as THE language. Perhaps a similar styled section on 'C' programming could follow once the COBOL series ends (perhaps based on Hisoft C.) At least, now following Clive's lead, I can now add COBOL to my repertoire of computer languages that I have dabbled in. The list reads :-BASIC, FORTRAN, PASCAL, FORTH, ASSEMBLER, C, COBOL.

Can I be as bold to make a suggestion on a small improvement to the way the FSW Library programs are listed? Well, would it be possible to sort the files into alphabetical order, since when looking for program names one has to wade through the whole lot. I know that sometimes the name has no bearing on what the program actually does but at least it can be a help. The numbers such as CPM-105 really have no use, I believe and as such are pointers (to use a 'C' term) for yourselves when dealing with orders. What do others think?

Andrew Norris
Taunton

<<Andrew. Hi. First, had you not renewed your subscription (but of course you did) your last WACCI would have been the April issue. *OMG* has changed the message to make that clear. USERLOG seems redundant as you now get a reminder on your copy of the magazine- and it does take up a page as you say.

Thanx for Squeeze. Nice to see it saves the palette as well.

OMG groaned at the mere thought of reorganising the FSW list. The problem is that it would be a large job and there isn't that much time in hand. Anyway, think of it each time as a nice educative trip round the list.

As a real language freak (I always had trouble with French myself) you are playing to *OMG*'s weakness. We'll C if there's anybody out there who wants to do a 'C'ries (I don't think I can take any more of this) *-Joolz.*>>

LE GRAB BAG

My Dearest Joolz, I want a word with thee. My name is Robert and definitely not Rob (euck) but you can call me Eric. Although you probably won't want to get personal (yet.) Furthermore, your paragraph on WACCISPELL 2 in PitL failed to mention that I have supplied an accompanying program to make old Dictionary files into ones usable by the new program. Anyway that's enuf of that ain't it, so lets get down to the nitty gritty of it all, shall we?...

(1) re WACCI 40 p11: Its nice to see that someone answered my plea on the CPM m/c to BIN (namely, the (w)mildly famous Dietmar Langehol. Not only did he write to you but he wrote to me personally, wot a nice person! two new progyettes from him will be sent as soon as I've received and sorted his DOC files. They produce BIN files from HEX and COM files respectively from within CPM.

(2) The PCW Debate: (This bit is addressed to *OMG*) I've been a'readin the letters pages etc. and I have the impression that most people don't really know whether having the PCW as an add-on will be good or bad, so why did you say that our thumbs were up to it, so to speak, when really nobody would risk not having their letter printed in your wonderful magazine. I just feel that everyone was too polite to say anything.

Besides, nobody is going to win an argument with you, when you've already got one, are they? Yet, I've got no objections (ere we go again) as long as it means more value for money. Oh, by the way, I want you to swear, on your job as ed that the PCW won't take over. (re PFD) That is, until I get one! Right, you can start listening again Joolz...

(3) MFU: A certain Amstrad publication said this utility is gonna cost 35 smackeroonies, or thereabouts, why? I thought this was/is/will be a "decent" club, well I like it. Is this utility meant to be an alternative to RODOS or just an extension? Once you've formatted a strange disc in you extraneous drive, can you use it straight from Amsdos/CPM or do you need a resident operating system like RODOS? Its, all very good to be able to transfer data from funny discs but what if you haven't got the right sized disc drive to put them in? Will the Club be providing a special transferring service, or will some enterprising person provide it?

(4) The mag: looking good, esp. Executive Stress, DU-plication, the revenge of PitL (!), FC, CB's COBOL, Glenn is back with a vengeance (who is he? Oh, I'm sure I'll get into it), poor AJ (but then again I'm glad to have a good months rest from sheer anarchy coupled with good sense - are you sure there aren't two of him?) Don't much like Vbb or FtCC, its seems far too simple but I'm sure someone must find it useful.

Lets have a series for m/c programmers who aren't amateurs or pros but somewhere lost in the void inbetween, like me. It just doesn't seem to have been catered for in the past. Most of the stuff I see is either too complicated or, basically, an insult to intelligence as we know it. (not incl. *OMG*)

(5) WACCI CPM and Homegrown Discs: A big thanx to *OMG* for putting together a list of exactly what's on each disc but what's happened to my Menu Maker. Isn't it good enuf for FSW yet? Problems with Drive B perchance. Could

you please hurry up with the Music disc Steve, I'm waiting, eagerly.

(6) Helpline: Dear Steve, I did ask to be put on it quite a while ago. Then again PFD did say that WACCI does have a slight time delay on its admin. Anyway, put me down as "Basic, fairly competent m/c, Waccispell, Printing + anything else deserves a good chat"

(7) Poking with Joolz: Could you please go back in time & pick out some FSW gems, cus some of the programme explanations on the library pages aren't explanatory enuf.

(8) The Readership: Wot no ideas. I don't see how the whole lot of you out there couldn't think of one single idea for me to program. I got more response from PFD, good on yer Paul! (081) re WACCI 41 p27, centre: This is the sort of thing I was talking about. I could write a Tennis Tournament Organiser for K.M. O'Neill if he contacted me. Of course Wacci would get a copy as well. I am also hoping to get round to writing a Golf Card designer and printer and maybe even something for keeping track of your scores and courses played on. I'm a golfer (H'cap: 21) What do you reckon they play on the planet *OMG* came from?

(9) re WACCI 41 p37, centre: ta Andy for that useful info. Your letter also mentions "Games." Well, WACCI is very definitely "serious," helping to put your home computers to good use with some excellent pieces of programming that WACCI has become so very mildly famous for. All those years ago, I used to play games continously on my CPC6128 but I used to program in secret in my Nuclear "steel lined" bunker, so nobody could find me.

Now I've got a whole drawer full of games collecting dust. I can't remember the last time I used my computer to play a proper game. Personally, I find that programming is far more productive & rewarding than playing "The Revenge of the Ninja Mutant Fanged Donald Duck on the zany Planet Zog" (There's a new challenge for you Aj.) Sometime I must get round to writing an article or three for Steve, my letters are "epic" enuf. *((yup))* (ps. I think I forgot *"Teenage.)*

(10) BUSBY: Well there you go! Or as PFD might say: "Sorry, I fell asleep" - I didn't mean to send it Paul. It was just a minor slip-up, Honest. (PJ)

(11) PCHANDLE.BAS: Please accept my humble offering of a program. It is meant to supercede FILTER.BAS and to clear the way for PRINTFNT.BAS So then what does it do? Well, it can take a Wacciword file and replace Wacciword's special printer codes with real ones, placing the Translated file back onto disc. You can then print out this file relatively easily without the need for accessing Wacciword. You can also do the reverse, enabling ASCII files with embedded printer codes to be translated so that they can be used in Wacciword. The program can also perform the same function as FILTER.BAS but is still 3k in length.

(12) Whatever happened to: Steve's joke that never got finished? Jeff Walker's tapes? Your Assistant?

(13) re WACCI 42 p10: Dear Kjell, you're in for a big disappointment if you think AA is better than WACCI. I do agree with Paul but I wouldn't go that far. WACCI is by far the best mag for the Amstradivarious and I wouldn't want it ever to stray too far from its current format. Lets hope *OMG* is the sensible alien he is, eh. According to Dave Bourne, PCW owners are satisfied with the mag as it is.

(14) re WACCI 42 p8, top right: Why has your telephone number changed twice in one issue, (081) 1090 ?

(15) Basic has a bug: Yes, believe it or not there is a bug in Basic. I haven't heard of one on the CPC6128 and although this one's a bit obscure I believe I can claim that I've discovered one.

Recipe: Take one resetted Amstrad, (ie with no precious programs on) and Type in "? " followed by a minimum of 82 minus signs (-) et voila, your computer probably does a boring old reset but mess around with the number of minuses and you get some strange effects occuring just before the computer crashes or resets. Can anybody with a technical mind explain this? Or is it only my computer?

(16) OUTRO: Anyway, must stop before you find out how mad I am, Joolz (about you) Is it true you work for "Cent Pour Cent" aussi. Hit Steve very hard with your sand filled sock for me, so I can say tarra, will you. Tarra Steve. Best wishes to everyone out there, esp. *OMG*'s tribe on Mars and Steve Bull & Wolves. Must dash, my CPC's overindulging in a bit of Amphimixis. This is your ever cuddly Eric signing off. Au revoir... (Apologies for any derogatory remarks)

Robert Heaton
Wolverhampton

<<Okay Eric. I'm really glad somebody responded to your plea - after all, that's one of the main reasons for WACCI's existence. Thanks and well done Dieter - and we look forwards to getting the programs in the library. And now over to *OMG*:-

[Hello Robert, what do you mean, people are too polite to say anything? WACCI has a very high proportion of active members and they darn well write in and let us know what they think. On balance the people who wrote and phoned in were in favour of including the PCW. I didn't decide finally until I'd seen what members had to say. There's no question of letting the PCW "take over" as you put it. Getting one for WACCI simply meant that we got access to a lot of good software that we might otherwise have missed- MFU is an example.

It was for WACCI, at our request, that Moonstone resurrected the CPC version. It's not an operating system, only runs under CP/M, so RODOS is out of the question but it's happy with RAMDOS Plus. As Peter said in his review, provided you have the right hardware MFU will let you transfer files to and from many strange discs and format them- but not use them for routine disc operation.

He tells me that it will even grope the sectors of a RODOS disc which is strange indeed. I think that he has a point though; the best bit is being able to communicate with IBM PCs by disc. If anybody wants to set up a transfer service, that could be a very good idea. But not at WACCI. There's no spare time at all on the machines here -Ed.]...

Well Eric, *Very Basic Basic* may be too simple for you but for some others its too complicated- and they are readers too. It's hard to pitch articles like that at the right level.

Your programs are going into the library- thank you very much- and your number onto the Helpline. And thanks for the bug; yes, the WACCI CPCs do it too and *OMG* and Creosote have been giggling and looking at the funny colours. The real mystery is what induced you to enter that combination in the first place... *-Joolz.*››

GO FORTH AND EXTRACT

Dear Joolz and Steve, I guess that the reason why I am still waiting for the loose PD software I ordered recently is that I have sent in one of those 'cheapo HONG KONG discs.' Personally, I have had no problems with them so far and did not know anything about 'concentric rings' until I read your remarks in WACCI 41. From now on I will try to be a little warey about the "Cheapo" discs and use them for back-up purposes only.

In WACCI (issue 41) Graham Fletcher wrote about a problem with FORTH16K which refuses to run under CP/M+ and a missing screen editor. Sigh...

I had the same problem under CP/M2.2, so the CP/M version cannot be the reason of the fault. There is no screen editor implemented in FORTHV1 but there is one in FORTH16K.COM. After an all night session with a monitor I have fixed the problem:-

FORTH16K.COM has somehow been partly corrupted between 08F1h and 0B02h. If you have a look at it you'll find some nonsense like *'Read the instructions first'* or so instead of program code. But there is the way to repair FORTH16K (of which this mildly famous European will now explain.)

Turn FORTHV1.ASM into a .COM file, like Graham did but don't change EM as it says in FORTH.DOC. Take a good monitor like Z8E (CPM-015) and extract 08F1h - 0B02h into a file named for example INT1. Then extract 0B02h - 1E00h from FORTH16K.COM into INT2.

Now load INT1 at the address 08F1h and INT2 at 0B02h of FORTH16K .COM. Save FORTH16K.COM from 0100h to 1E00h. The result of all this fettling is a version of FORTH16K that works OK. But the GOOD NEWS is that you don't have to bother with all this messing around with monitors and stuff, because I've all ready done it for you!

So, please find, on the enclosed disc, a file called FORTH16.COM to replace the one called FORTH16K.COM in the WACCI CP/M PD library.

The essential thing to remember when mucking about with FORTH16 (or even FORTH16K) is that it needs to run under CP/M 2.2 (YES dig it out from the archives you CP/M Plus fans.)

The screen editor in FORTH is a special editor for the handling of FORTH screens. In FORTH the whole disc forms a screen file.

To edit a screen type EDITOR and load the screen to edit but not with ‹LOAD› but ‹n LIST›, where n is the desired screen number. Type ‹n T› to choose line number n. After ‹P› you can insert a Text into the chosen line. ‹FLUSH› writes the changed screen back to disc.

In order to get a working copy of FORTH16K onto a freshly formatted disc. To detect the lowest possible screen number start FORTH and list screen 50 (decimal). No fireworks on the monitor screen yet? OK, list 49 next, then 48 until something strange occurs. When it does, you will now know the lowest screen number. Never copy another file to your FORTH disc as this would corrupt your screens.

Another way of operating FORTH is to insert an empty formatted disc to hold the screen file after starting FORTH. FORTH behaves like a mixture of a language and an Operating System. You cannot list the screen file with DIR and it is not possible to copy it to another disc in the usual way unless you copy it track by track and sector by sector. That means you have to make an exact physical copy of the disc.

If you want to learn FORTH I can recommend Leo Brodies book 'Starting Forth' (ISBN 0-13-843061-6).

Let me finish this letter with three promises:-

1. I promise I'll never ever send you any 'cheap concentric circles' discs in plastic cases.
2. I will add the return postage for this disc to the next order or subs renewal as I think it doesn't make sense to send a cheque for such a low amount and you may not have any use for German stamps.
3. You will be getting two programs which produce BIN files from HEX and COM files from within CP/M soon.

If you have any CP/M software to install or to copy from 5 1/4" to 3" I could have a try at it.

PS. I think I have no problems with my English grammar, I hope you haven't either (with mine). Best wishes.

Dietmar Langenohl
Berlin

‹‹Don't apologise, I wish my German was half as good as your English.

Your last point is an amazing coincidence Dietmar as *OMG* has just posted a disc of CP/M 2.5 stuff (yes I do mean 2.5, not 2.2 or 3) for you to install and test out. You'll probably have received it before you read this.

Thank you for doing all that hard work on FORTH16K. After reading your letter I felt inspired enough to dig out my CP/M 2.2 disc and have a go at using FORTH and guess what? It works just as you said it would!

Another coincidence is that there is a new series in the pipeline, written by Paul Dwerryhouse and Uncle Clive Bellaby, about learning to program with FORTH. Keep watching out for it, it should be here soon.

Don't worry about sending money for return postage, it's always nice when people do include it but it's not strictly necessary.

Don't worry about the disc you sent in either, it wasn't one of the *"cheapo Taiwanese/Hong Kong nasty concentric cirles stamped on the outer case jobs."* It was, in fact, an ordinary disc but it was the contents that were special. *OMG* has an annoying tendancy to hold on to discs that have wonderful stuff on them. He does eventually send them back to their owners but for some reason he feels the need to hold on to them for a while. I'll give him a nudge *-Joolz.*››

THIS MONTH - YOUR FAVOURITE AUNTIE GETS TOTALLY C-RIOUS

So where was I? Ah yes, complaining on how tough life was. Strange, isn't it? Just when you think you have reached your quota for things happening, a huge truck comes and dumps a whole load more in your front garden.

Yup, looking around me things have changed. Like the printer used to print WACCI, for instance. It seems to have a bug and *slips into italics when you least expect it.*

Other things? Well one or two that you'll notice if you keep your eyes peeled. My beard for example. It's gone. Sniff.

oooOOOooo

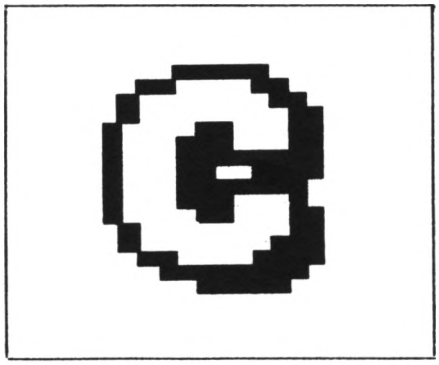
C FOR YOURSELF

Here are a couple of quick book reviews for anyone struggling to get to grips with that most noble and downright odd languages, C.

First off the book shelf is *"C - The Complete Reference"* by Herbet Schildt.

This is a whoppingly huge book, complete with £22 price tag. However, if you do buy this one, you need never buy another. It is superb and combines a tutorial with a reference with a programming cookbook.

I can't recommend it highly enough and if you are lucky you should be able to pick up a copy for considerably less than I've indicated because a newer version which covers C++ has just been released. Unless you plan on changing computer systems (you traitor!) then you won't really need this bit. That said, there is a final chapter in the original book on C++ that makes interesting reading.



Who put the 'C' in WACCI?

The second book is one called *"C - The Programming Tutorial"* by Leon Wortman and Thomas Sidebottom.

Do not buy this book. It's rubbish. At fifteen pounds it's overpriced rubbish at that. It may teach you a bit but as soon as you get beyond writing "Hello World" on the screen you'll chuck it away. Save your money.

oooOOOooo

Finally, a bit of side-step away is *"Programming Principles in Computer Graphics"* by Leendert Ammerall for £13. It forms a wonderful introduction to vector graphics, dealing with rotations, perspective and hidden line removal. There are a few snags, such as it uses "C" in the example listings and from the CP/M version of C you will have problems using graphics. Unless of course Dietmar Langenohl explains to us how his Bomber program works. I have known for some time that using CPC graphics firmware is theoretical possible but I have never been bored enough to attempt it. What's the news, Dietmar?

oooOOOooo

WHO? WHAT? WHERE? WHEN?

As part of my training in how to become incredible rich and famous, I was forced to visit the recent Which?

show in Birmingham. Although there was not a great deal of interest to the CPC or indeed 8 bit user in general, it was definitely an interesting experience.

oooOOOooo

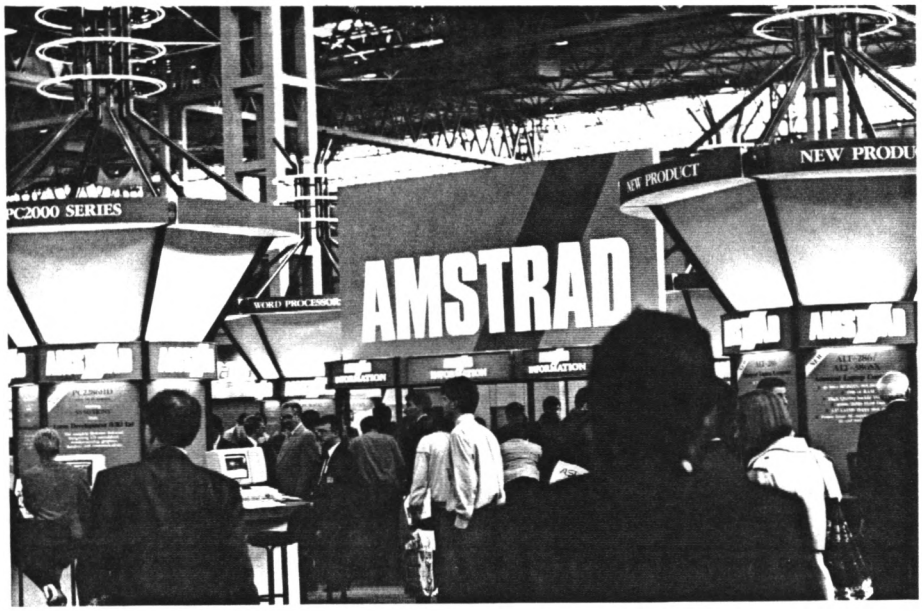
Commodore used the opportunity to launch a new Amiga beyond the reach of 99 percent of most people and I had a great time drooling over it. Green had great fun drooling over the PR girlies as they used their own particular brand of PR to attract attention. Not wearing any clothes seemed to play a major part. The girlies as well.

The new Amstrad laptop PC was also there and Green and I had to make a sharp exit after we erm.. *adjusted it?*

oooOOOooo

Rombo also had a stand and although I had a great time watching a member of the staff being pestered by a German with an animation package, the lack of Verona brought down the entire day. though. *Sigh....*

The good news is that Rombo can provide black and white video cameras for serious digitising freaks. Costing about £200, they are probably the best you can buy and will serve you well. Plus you can lend me it for a bit.



OTHER STUFF

Ah, the joys of being grown up. It's just like being a kid but you're allowed to put your Scalextric up in the living room.

That's my reasoning anyway and so I rushed out to the nearest Toys "R" Us and bought the biggest set I could find. It's brilliant!

In the several years during which I have been too *"grown up"* to play with it, Scalextric has changed almost beyond recognition. The cars now have magnets to help reduce the dreaded rear wheel skid and little LEDs to provide a turboflash when they slow down. Highly recommended. Plus look out for a special WACCI hardware project to equip your CPC with lap timing and scale speed generation facilities. Coming to a Aj diary near you! As soon as I can find my Maplin's catalogue anyway...

oooOOOooo

OOPS - 1

Working in a magazine office we often get 'phone calls from members of the public. Now, don't get me wrong, the public is a wonderful thing. It buys magazines for a start. Not enough but it does its best. However, some members of the public are not too totally completely cognescent of the ways of computers. This I can understand. No one was born knowing everything. What I do not like is those who do not understand and blame me for it.

Only last week, a rather irate gentleman rang me up (and called me *"young man"* - minus 100 points immediately) complaining that his Amiga cover disc wouldn't work in his IBM compatible machine.

"But," said I, *"its an Amiga magazine. For Amiga owners. The disc works with Amigas."*

"But," said he, *"it doesn't say 'does not work with IBM' on it."*

"But," said I, *"it doesn't say 'does not work with tumble driers, tractors,*

video recorders or small pieces of steak and kidney pudding' on it..." Well I didn't. What I actually said was... *"Well it shouldn't have to. It's for an Amiga. Every home computer has it's own standard. The CPC, the Spectrum and the Atari all have their own standards."*

"No they don't," he said, *"they are all IBM compatible."*

"No they're not," said I. *"Oh,"* said he, obviously not believing me, *"But what's the point of making Amigas if they are not IBM compatible?"*

And so it went on, with the gentleman ending with the comment that he wouldn't report me to the trading standards authority *"this time."*

oooOOOooo

OOPS - 2

As yet another publishing company goes wall-wards, namely Argus Specialised Publications Ltd, I'm reminded of the words of new ACU editor Chris Knight as he 'phoned me to extract work in exchange for no money (can't be an easy job.)

"Well, I'm now sitting in the shoes of the editor, so I'm sure you'll understand my position is very uncomfortable." Indeed.

oooOOOooo

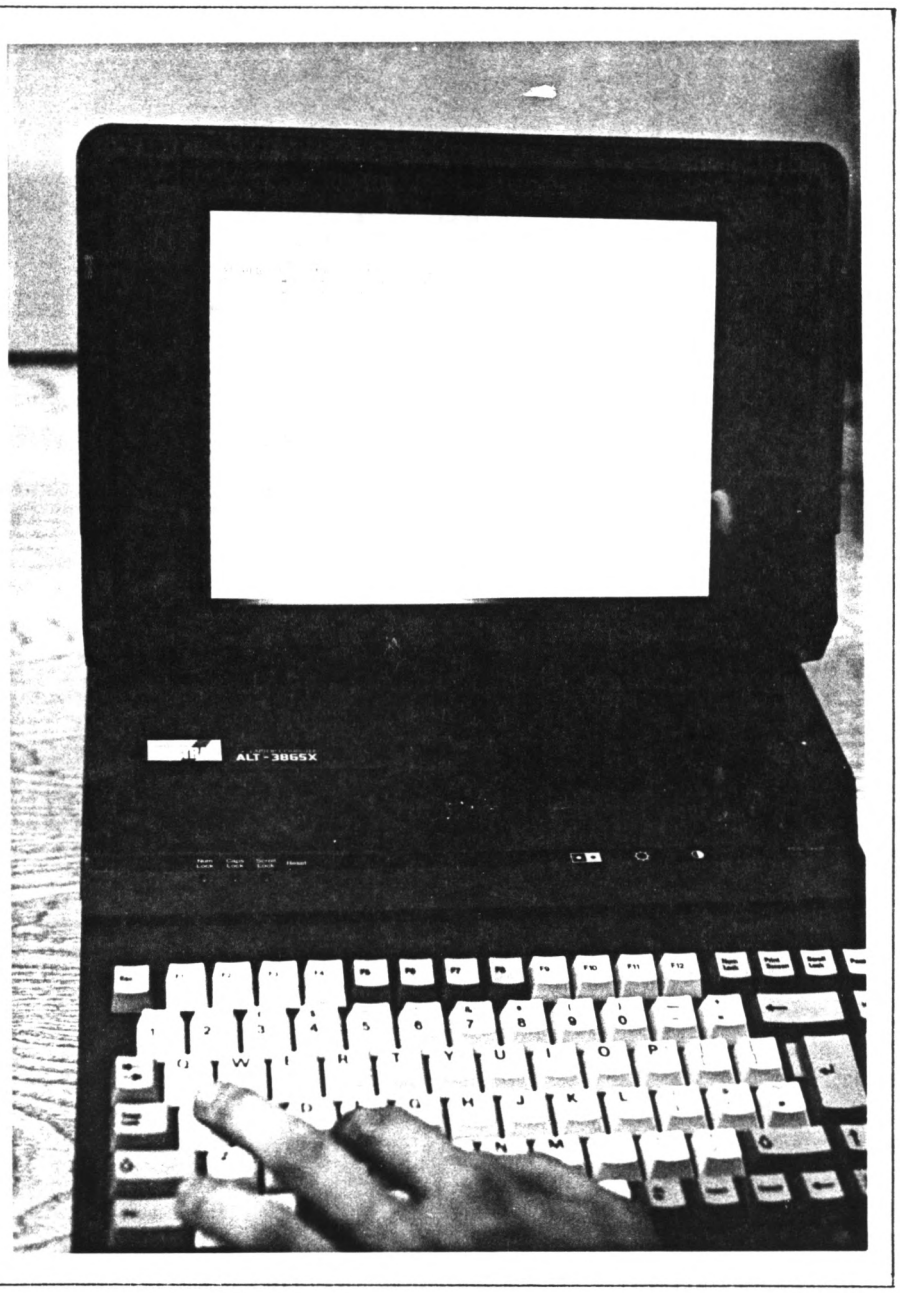
AND FINALLY

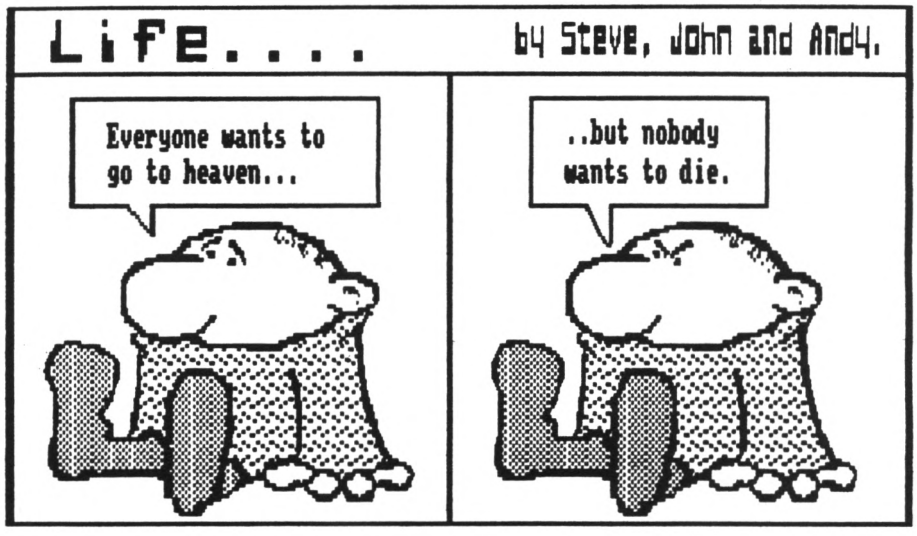
What! Another Aj's concept disc? Yup, all the nice things in the previous issues have had their effect. As the summer threatens to come upon us all, what better way to relax than with another disc of sillyness. Completely ozone friendly (well the contents anyway) and guaranteed to provide up to fifteen minutes of endless fun, the disc will make a worthwhile addition to any collection of useless items.

Lots of stuff,
Your Auntie,

John.

PS. Verona, why do you never ring me?





VERY basic basic

BY

ALAN TILLING

Letters to:-

Very basic Basic
65 Lawrence Road,
Altrincham,
Cheshire.
WA14 4EL.

SPACES - THE FINAL FRONTIER? ALAN TILLING COMPLETES HIS FIVE YEAR MISSION

Hello everyone, 'tis I. Over the last few weeks I've been asked some questions which I took for granted that everyone knew. You know it's very easy to fall into the trap and forget that new-comers are just that and are not experienced.

-{VbbVbb}-

One of the things I was asked was "How do you stop words being split up at th e end of a line." This sometimes happe ns and is usually caused by the writin g being restricted to twenty, forty or eighty *characters* per line, depending on which MODE you are operating in. No tice I say *characters*, this is because when we humble humans PRINT we usually write the words, splash the punctuatio n and ignore the spaces altogether. (I say print because that is the computer s word for it. OK enough of the example and yes, the lack of word-wrap in this paragraph was deliberate.

-{VbbVbb}-

If you went to a gud scool you will probably write with joined up real writing, like wot i do.) But the point is the same, we humans, usually, don't count spaces only the letters that make up the words. So if you have to restrict your self to (say) 20 *characters* per line and the "end of the line" occurs in the middle of a word, simply add enough *spaces* to get you to the next line, like this, (I've used ¦ to indicate spaces)

```
Before

The¦quick¦red¦and¦br
own¦foxes¦jumped¦und
er¦the¦lazy¦dogs.

After

The¦quick¦red¦and¦¦¦
brown¦foxes¦jumped¦¦
under¦the¦lazy¦dogs.
```

-{VbbVbb}-

The next big question I had was "What does BIN, BAS etc mean, when a disc is CATalogued." This, strictly speaking is not Basic but AMSDOS - AMStrad Disc Operating System, but it's all to do with driving the computer so I'll have a go...

-{VbbVbb}-

A file's name is made up of two parts separated by a full stop. The first part is the file name (usually written as ⟨FILENAME⟩ because a space is not allowed) and the second part (or field) is the file type. For most of the time, this file type can be ignored because the computer will sort this out for you, free, gratis and for nothing. Well not quite free because you may find that your available disc space is being gobbled up with files you have not saved and do not want. I'll come back to this in a moment. To start with type in the following proglet:-

```
10 ?"This is test program 1"⟨RETURN⟩
```

Put a blank formatted disc in the drive and then type SAVE"TEST" then press the RETURN key. When the cursor returns, type CAT and press the RETURN key again (the empty disc isn't really necessary but it makes observing what is going on easier.) The CATalogue report will show:-

```
Drive A: User 0

TEST    .BAS 1K
```

...Plus any other files and the amount of remaining free space.

Now type in RUN"TEST followed by the RETURN key and the original message will be displayed. BAS is added at the end of a BASic program. (To speed things up I'm not going to tell you to press the RETURN key any more, it's

the big bugger underneath the DEL key, so if things don't seem to go right make sure you haven't forgotten it.)

If the program had been written in machine code (or BINary as its known) the file type would have been BIN. In the same way an ASCII file is given the filetype of " " that is space, space, space. You can use your own file type but if you do you must use it all the time ie. if you used

```
SAVE "WACCI.BUM"
```

then you must type RUN"WACCI.BUM" to use it otherwise if you try RUN"WACCI" Arnold will look for WACCI.BAS and retort WACCI.BAS NOT FOUND.

Type EDIT 10 and change the 1 to a 2 by placing the cursor over the 1 and pressing <CLR> then typing 2 <RETURN>. Now type SAVE"TEST"

Now type CAT and the report will show, (among other things)

```
TEST    .BAK 1K
TEST    .BAS 1K
```

What does this tell us? Well first off that the report is in alphabetical order and that two Kilobytes have been used up in saving a program called Test. It can be seen that eight characters are allowed in the first (filename) part and the computer has added its own file types (BAK and BAS). In the filename portion, eight letters and very little punctuation are allowed.

Spaces and full stops are definitely taboo. Arnold will add any spaces it needs to make up to eight characters. The CATalogue is always given in upper case even, as in this case, the program was saved with the name in lower case. Now for the BAK and BAS parts:

-{VbbVbb}-

Notice that each time you saved the proggy you used *exactly* the same words and Arnold has added not one but two

```
 80 ' BIGLABEL.BAS BY  AL 'THE L PLATE' COOPER - 1989
 90 PRINT#8,CHR$(27)"@";CHR$(27)"M";:' "BIG WACCI LABEL" FOR MAGNETIC DISC
    POSTING
100 PRINT#8,CHR$(27)"x1";"              CONTAINS TYPED DOCUMENTS AND
110 PRINT#8,CHR$(27)"W1";"   MAGNETIC COMPUTER DISCS
120 PRINT#8,CHR$(27)"W0";"  WRAPPED IN ALUMINIUM FOIL TO PROTECT THEM FROM
    X-RAYS.
130 PRINT#8,"        YOU MAY OPEN AND EXAMINE THE CONTENTS BUT";CHR$(27)"-1"
140 PRINT#8,CHR$(27)"E";CHR$(27)"W1";"!  D O   N O T   X - R A Y  !";
    CHR$(27)"-0";CHR$(27)"F"
156 PRINT#8,"
157 PRINT#8,"To:- THE EDITOR,   ";CHR$(27)"W0";"Phone (01) 898 1090";
    CHR$(27)"W1"
160 PRINT#8,"      WACCI UK, ";CHR$(27)"W0";"(Computer Magazine)";
    CHR$(27)"W1"
170 PRINT#8,"       9 South Close,
180 PRINT#8,"        TWICKENHAM,
190 PRINT#8,"         TW2 5JE
206 PRINT#8,CHR$(27)"-1"
210 PRINT#8,CHR$(27)"E";"!  D O   N O T   X - R A Y  !";CHR$(27)"W0";
    CHR$(27)"-0";CHR$(27)"F"
230 PRINT#8,"From:- Mr.A.A.Cooper, 35 Drumard Drive, LISBURN, BT28 2HY.
235 'Put your own address etc. in here.
240 PRINT#8,"                   Phone (0846) 674161 "
250 PRINT#8,CHR$(27)"@":' Reset the printer. I always forget. This
    version has been reduced to single height, as many printers cannot do
    Double. 120 D WP was used to prepare this program. The codes are all
    available from the function keys.
```

file types. For prog 1 it added BAS. Now when prog 2 was saved, prog 1 was changed from BAS to BAK and prog 2 saved as BAS. To demonstrate this type run"test and the second message will be displayed. To get at the original one type run"test.bak". This means that when you save a Basic program BAS is added and at each subsequent save of the same program, the new old file becomes BAK and the new file BAS this means you can always BAcK track one save so if you make an almighty blunder you don't have to go back far.

-{VbbVbb}-

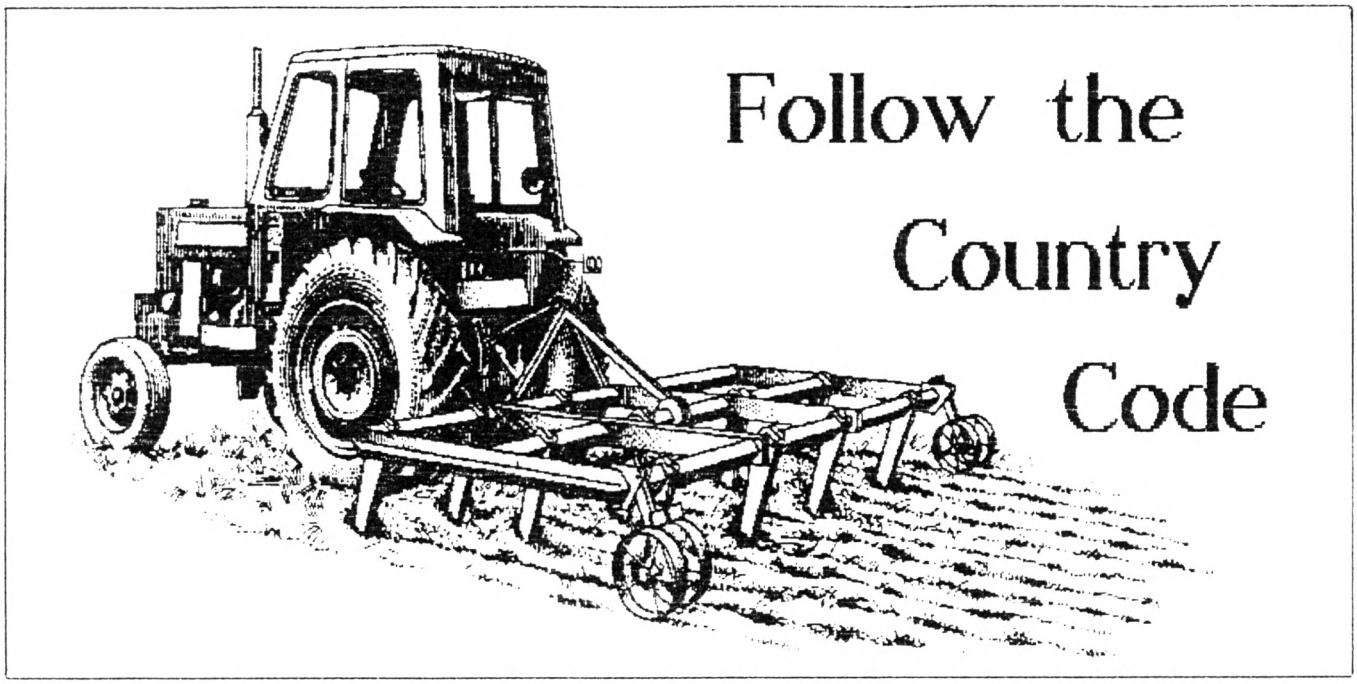
Finally to get rid of the bak files the following can be done:- To erase TEST .BAK type...

```
|era,"test.bak"<RETURN>
```

the disc drive will spring to life and when the ready prompt returns type cat and you will see that that particular BAK file will have gone. Notice also that the amount of free disc space has gone up. If you have several BAK files then this can be typed: |era,"*.bak". Be very careful when you do this and read through the command before you press <RETURN> because it means erase *any* file with the file type BAK and all bak files will disappear so if you miss type something you may mess up lots of work. The next powerful Amsdos command is |era,"*.*". This means erase *any* file with *any* file type in other words erase all files, very useful but extremely dangerous.

Well I'm running out of room again so I'll say... Bye for now

Alan.



Follow the Country Code

"NORMAL" NORMAN BUXTON TAKES US DOWN ONTO THE FARM

The story so far... Norm, WACCI's intrepid secret agent has been requested to save the life of an important computer freak called Arnold, currently held to ransom by that infamous gang, AMICO.

Norm, posing as a peasant, has been sent wearing only green wellies and carrying his electronic buttybox but reports back when he can in a form that looks like information on control codes. Now read his latest transmission...

DAY 93: *DEEPEST MACCLESFIELD*

Want Another iCe-Cream tonIght. Silently, I inched my way through the kitchen door. In front of me, with his back towards the door, stood the perpetrator of the crime. Semi-crouched, I pulled my handcuffs from my jacket. Then, with one mighty leap, I finally arrested the man who had masterminded the putting of lumps into custard for over thirty years.

-+--==<<0>>==--+-

Ah! There you are! That was just a sample of the exciting work secret agents get up to. But enough of this frivolity. I shall have to check whether you have learned last months work. This once a month lark is just so infrequent that I suspect that you are not doing your practice sessions like you should.

Control codes are the ASCII values numbered 0 to 31. They are recognisable by the alphabet letter used with them, thus Control-A is chr$(1), Control-B is chr$(2) and so on. (They are actually ASCII numbers minus 64, so that the backslash (ASCII 92) used with Control produces chr$(28) on screen in its code form. When printed to the screen, they produce effects similar to those available from Basic programming but using a fraction of the space and finger-work.

-+--==<<0>>==--+-

Up to now, we have used control codes alone for screen handling but there are some control codes that will not operate without further parameters. But (and I am afraid it is a big but) although the codes are easy themselves to use, they are much more unfriendly if you mis-use them, as you will not get a nice friendly message telling you what has gone wrong.

Instead, the system struggles on usually by interpreting any available data in the best way it can.

-+--==<<0>>==--+-

Lets start this time with a simple pair used in the same way as those before. Control-B and Control-C which turn the text cursor off and on respectively. As you know, the text cursor is shown automatically when Basic is waiting for you to input instructions or data but using the codes above (just like using a CURSOR command with its parameters), you can display the cursor at other times.

-+--==<<0>>==--+-

Have you ever looked at the demo prog on side four of your system discs? In that demo, there is shown a spread-sheet look-alike which uses a cursor to show how and where the computer is calculating. If such uses are your forte, then Control-C will turn the cursor on, Control-B will turn it off again.

The equivalent of a MODE command in code terms is Control-D, followed by a parameter value between 0 and 2. This parameter value, like any other, must be the ASCII value and therefore must itself be shown as a control code. However, there are big problems in persuading chr$(0) to appear on screen in code form. For this reason, the best way to produce mode 0 is to use a parameter value of 4 (Control-D). Since the parameter is read as mod 4, this then has the desired effect.

-+--==<<0>>==--+-

PUTTING PEN TO PAPER

PEN and PAPER ink values can also be set using codes. These are used in exactly the same way as we would use, say, PAPER 0 or PEN 0.

Taking PAPER first, this code is Control-N (chr$(14)) followed by the ASCII number of the pen you wish to name. As before though, chr$(0) is difficult to produce on screen and in this case, you can more easily use chr$(16) as the ink number is read mod 16.

The PEN command (Control-O) is, surprise, surprise, used in exactly the same way. You just follow your control-O with an ASCII code between 0 and 15, again read mod 16 if the code falls outside these values.

If you will maintain your concentration for just another minute or so while I introduce one further code, we will then use them in examples to illustrate the degree of space-crunching that you can achieve.

-+--==<<0>>==--+-

Window commands are the next to be tackled. Pressing Control-Z will bring a bolt of lightning to your screen but also tells your CPC to look out for window dimensions to follow. At this point, it is worth repeating that the parameters you enter here should be checked before use, as I have no knowledge of what the screen attempts to do if you try, for instance, to produce a window larger than that available in the particular screen mode.

What I can tell you is that you end up with rubbish windows if you dimension rubbish. One other thing to mention here and not documented anywhere, is that you should always specify the addressed screen when using this command. I mean that you should use the format:-

```
PRINT #(screenno),"CODES FIT HERE"
```

If you do not, then I understand that it defaults to #0 but you may not want the normal screen to be altered. It is just good tidy practice to specify it and saves the occasional clanger.

INTO ACTION

Let's put these codes into some example now to see how it all works. Find that original example we used for producing five-letter words.

We'll start by getting rid of line 10, which only cleared the screen and which we found a much easier way of doing with Control-L.

Bring line 20 into edit mode. Replace tab(9) with #1, which although we have not yet defined #1, is quite alright. We shall now enter some codes in front of the text but inside the inverted commas. I shall list them here in order together with brief reminder of each action.

Control-D	Mode command
Control-A	Set mode to 1
Control-Z	Window command
Control-K	Left edge at 11
Space	Right edge at 32 (Space = chr$(32))
Control-F	Top line 6
Control-L	Bottom line 12
Control-X	Swap pen & paper
Control-L	Clear #1

Try running it now and you should find that screen 1 with reversed pen and paper inks occupies the middle of the screen from one quarter to one half of the way down. Note that the pen and paper inks are reversed before clearing the screen.

This little demonstration of the compact nature of control codes will either whet your interest for more or will kill it off completely.

I hope that you are still keen to learn more about these codes, since I think there are lots of useful spin-offs from their use.

I shall mention just one more this month. How many times have you typed into a printer driver the ESC code (chr$(27)), say, as part of a printer setting command. Well, you can now enter it as Control-[(first square bracket), inside inverted commas and save yourself a couple of skin thicknesses off your finger-ends. Thus the command for emphasised text becomes:

```
print#8,"[E"
```

where the [stands for the screen code for chr$(27) which cannot be replicated on paper.

-+--==<<0>>==--+-

I have given you a hard time, learning without any break this month and obviously things can only get better from now on, or so I shall let you think. We have of necessity covered a lot of ground but it is ground that should be dealt with at one, otherwise the point of doing it may be somewhat obscured.

Signal falters...

It seems like I shall have to finish now. Please pick up the payoff at.. (hiss) ... at midnight the day after tomorrow. Signing off now with the next pass-phrase.

Will Anyone Call Charlie In time.

Signal fading....

Yours unwittingly....

The Peasant

Signal lost.....

DOS Wars

PETER CERESOLE'S (ALMOST) DEFINITIVE GUIDE TO 3.5" DISC DISC OPERATING SYSTEMS

Lots of you little WACCIites are getting megadrives these days but there's many a question about the best Disc Operating System to use.

oooxOOxooo

WOZZAT

What is a DOS? Will I like it? Why doesn't the subject come up in the bar on Friday night? Why 42?

Well, there are two DOSes in the manual (as opposed to 50 dossers enjoying Margaret Hilda's hospitality under Waterloo Bridge.)

oooxOOxooo

IN THE BEGINNING

Let's start with CP/M. That's an Operating System- in fact it's the grand-daddy OS. It handles the relationship between the heart of the computer (its central processing unit or CPU) and the outside world, the keyboard, screen, printer and especially the disc drive. A Disc Operating System, right?

CP/M comes on a disc itself and to use it you load it first. This means that any CP/M machine has to have some simple routine in ROM to load CP/M, ("|CPM" on the CPC) after which it is transformed into a cosy friend with the "A>" prompt to make the heart beat faster. From then on, any disc access is handled by programs built into CP/M, which know how information is stored on the disc. That organisation is known as the "format" of the disc and the DOS controls the movement of the head and the reading of the magnetic tracks.

First it searches the directory, finds the requested file name and reads the information stored there, discovering where the file is kept (which could be anywhere, scattered across the disc and filling up holes left between other files.)

It then sends the head off to read the file, dodging about to read the various bits of the file in the right order. You can hear the stepper motor driving the head back and forth, buzzing and groaning.

As well as CP/M, we are blessed with Amsdos. That's another operating system, completely native to the CPC, which won't run on any other machine (unlike CP/M) and lives in ROM so you never really have to think about it. You often talk to it via Basic, which is also permanently in ROM but ⟨⟨load"zappo⟩⟩ for example is an Amsdos command.

oooxOOxooo

GOOD FORM

Different drives have different formats. The "normal" CPC data disc is read one side at a time. There's a standard space for 64 directory entries, no matter how many entries you actually have, that ties up the first four sectors of the first track (track 0).

The files then occupy the other five sectors of track 0 and have all the other tracks on the disc (up to track 39) to live in.

A single head reads that side, stepping from track to track across the disc. To read the other side, which is identically laid out, you have to turn the disc over, so that the same head can get at it.

Amsdos and CP/M, as they arrive with the CPC, both know *only* this arrangement. (The only variation allowed is with discs that can start up CP/M itself, called "system" format but the difference is small.)

oooxOOxooo

VIVE LA DIFFERENCE

Megadiscs, however, are quite different. Depending on the format (and there are *stacks of them*) there can be up to 256 directory entries, taking up four times the space. There can be twice the number of tracks on each side, packed more closely together, with ten sectors per track instead of nine. The other difference is that there are two heads, one above and one below the disc, so that they can read both sides of the disc without your having to turn it over.

You can see that the instructions to control the heads and read the files under this set-up will be very different from those needed for the standard CPC drive. And that's why, to run anything different in the second drive you need a different DOS.

oooxOOxooo

DOIN' THE DOS

There are different approaches to this. First, under Amsdos.

All disc instructions are normally sent to what's called the CP/M ROM, ROM number seven. It contains the disc operating system. One method of handling megadiscs is to put a program

in memory that intercepts any instruction to ROM 7 and sends the correct instructions to the drive itself. It knows that drive A: is normal CPC and it knows the format of drive B:.

This is the approach of RAMDOS. It has to be loaded into memory each time the machine fires up and it might sit in an awkward spot if a program (such as a word processor) is not expecting to find any code there and writes over the area that it occupies.

oooxOOxooo

The alternative is a ROM that has a number lower than seven. This means that it can intercept instructions to ROM 7 and send the right DOS instructions to the drive B:. The advantage is that it takes up a very small amount of memory but it does have to be designed not to clash with any programs that run on the CPC; it and they both have to be absolutely kosher. Programs that get away with tricks on the normal machine, because they are trying to get round a limitation in Amsdos, may cause trouble. Another drawback is that you need a ROM box to run it. More money.

CP/M is different. Because it's in RAM after loading, it can be modified to operate the second disc drive and this is what RAMDOS+ does.

oooxOOxooo

GO NOT SHOW

So how do the available systems work in practice? Since we asked, we've been getting the usual splendid reaction from WACCIites- you've been reading it in Fair Comment lately. What there *is* is this:-

RODOS-	ROM, Amsdos only. RODOS Extra on disc, costs extra.
ROMDOS-	ROM, Amsdos only but comes with RAMDOS and RAMDOS+ on disc.
RAMDOS-	Disc, Amsdos only.
RAMDOS+-	Disc, CP/M only.

UNDER AMSDOS

RODOS

Comes on a ROM. Huge, very powerful and comprehensive. See Mike Lyons's review this month. It works with Maxam, Protext and Prospell and v2.19 will, at last, allow printing with Promerge+ (but read Mike's article closely for details.)

Phil Cox has had some disc problems with an earlier version as he gets over 500K but isn't sure of the cause... There are other problems reported by members, like trouble with the dk'tronics Silicon Disc and problems with loading some games (not unusual with ROMs.) Art Studio and Music Studio won't use a large drive B: and neither will Stop Press.

You can buy RODOS Extra on disc, which among other things will (at the speed of *slow* treacle) transfer files between CP/M and IBM discs but you can't run CP/M programs under RODOS, or look at RODOS discs under CP/M. So, for example, using DU on a RODOS disc is out. RODOS has its own disc utility but it's pretty unwieldy.

There's a comprehensive formatting program in the ROM.

ROMDOS - on ROM (surprise surprise.)

Not an all singing all dancing program like RODOS; more limited but easier to handle. Works with Protext, Promerge+ and Masterfile but not with Art Studio. Does not work with Tasword 6128 or Qualitas Plus- but it works with the smaller Tasword. Mini Office II won't play with the big B: though.

If you buy the ROM, you also get a disc with RAMDOS, RAMDOST and RAMDOS+ and a disc formatting program. The discs work fine with CP/M.

RAMDOS

This is a disc based offering, it can be bought separately. Will work on any CPC. Works with Basic programs and there is a special version (RAMDOST) that works with Tasword 6128 and a short program that allows it to be used with Qualitas Plus.

It doesn't, in our experience, work with Protext ROM and Promerge Plus, with Masterfile or with Art Studio- none of them will use drive B: properly. Once again, you'll get no joy with Mini Office.

oooxOOxooo

STUDYING THE FORM

Under RO/ROM/RAMdos, normal formatting utilities, such as the formatting arrangements built into Protext, don't work for drive B: although they handle drive A: as before.

RODOS has a built-in formatter in ROM. It's very integrated and neat- for example you can format from within Protext which is good. The only mega format is RODOS which is wonderful and big:- 819.5K, an almost unlimited number of files and sub directories just like the grown-ups - but totally incompatible with anything else (meaning especially CP/M.).

In ROM/RAMdos the Basic formatting program (FORMATS) gives you a choice of several formats, with a default of D20, which gives you space for 256 directory entries and 792K for files. This means you have to go back to doing all your formatting in advance- no more knocking off a disc from within Protext when you run out of space. But having 792K to play with reduces the pain *a lot*. And in a real crisis, you can always save onto drive A:.

The best practice is to buy a lot of discs (they're cheap, remember) and have a heavy formatting session on the first evening. That should see you right for a fair while.

Another point worth making is that none of the special copying utilities such as WOPS will work- the way they work is by ignoring Amsdos, so they ignore RO/RAM/ROMdos too and tell you the disc has a non standard format- and so it has. All over with those dodgy copies, chaps.

oooxOOxooo

MOVING AND GROOVING

For normal file movements RODOS has a |COPY built in that works to and from the mega disc and is very slick; handling wild cards and user areas or sub-directories like a good 'un.

ROM/RAMDOS isn't nearly as good- there's no such copy utility and, for instance, Protext's built-in COPY utility will not copy files to or from drive B. You have to load the file and save it back to the other disc, or, if you have it, use the funny UTOPIA single file COPY utility which uses the normal DOS to work.

But (and this is the great advantage of ROM/RAMdos) you can use any CP/M utility like PIP (powerful and spanner-like) and NeWSweeP (totally and utterly wonderful.) It does mean getting into CP/M though and RODOS is much more integrated in this respect.

As for other disc utilities, Disc Menagerie won't work on drive B: although it will still handle A:. This is also true of Utopia's DEDIT. You can see a pattern emerge here:- file operations which use the normal DOS system are okay, disc copies are out.

There *are* disc copiers in FORMATS, the RAMDOS formatter and in RODOS, that operate via a specially formatted CPC disc in drive A:. This is where you realise that disc operation on the CPC is very slow indeed. To describe copying a whole 800K disc is a challenge to the Engish language. What's slower than "glacially" slow? "Tectonically"?

Given all this, it's best to copy files, not discs.

UNDER CP/M

RAMDOS+ is called from CP/M and is simply terrific. It works with just about everything we have tried. You can patch CP/M itself so that you don't need to call RAMDOS+ each time you start up but it's so simple to run with a SUBMIT file that there seems little point. The best news is that it works with the Graduate CP/M ROMs, too, giving you instant access to the powerful and cheap CP/M utilities.

Protext runs fine but (aha!) won't format B: or copy discs, *although it copies files perfectly* (unlike the Amsdos version.) Brainstorm works happily. Newsweep works better (and is more useful) than ever and DU will grope the discs in whatever format you choose (but not RODOS.) But if you ask it to do a map of a fullish disc it thinks about it for so long (10 secs) that you think it's crashed. General Ledger, the Small Traders Pack and Supercalc run fine (thanks to Tony Buncher for the info.)

oooxOOxooo

GOOD FORM

You can format from CP/M using the totally and deeply, *deeply* wonderful Multi Format Utility. It doesn't come with the ROM/RAMDOS formats built in but you can create and store the formats you want. This is fun.

More than that (see last month) MPU has a wizard CP/M-IBM file transfer. This is even better than fun.

oooxOOxooo

SPEAKING PERSONALLY...

These are all good DOSes. Using RAMDOS+ in CP/M is a piece of cake. Under Amsdos, so is using ROMDOS and RODOS. RAMDOS with Amsdos won't live with any of the programs I normally use but if you use Tasword 6128 or mostly program in Basic it could be just what you need.

You just have to make sure that your particular software will run. If in doubt ask the supplier. Maybe they won't know, so then ask WACCI. But there are programs that leave no doubt of their awkwardness.

oooxOOxooo

NO-NO MANITTE

Art Studio refuses *under any circumstances* to believe in funny discs. Pity, because with those .SCR files it needs more disc space than most. We tried Brunword and our copy wouldn't play either, under RO/ROM or RAMdos.

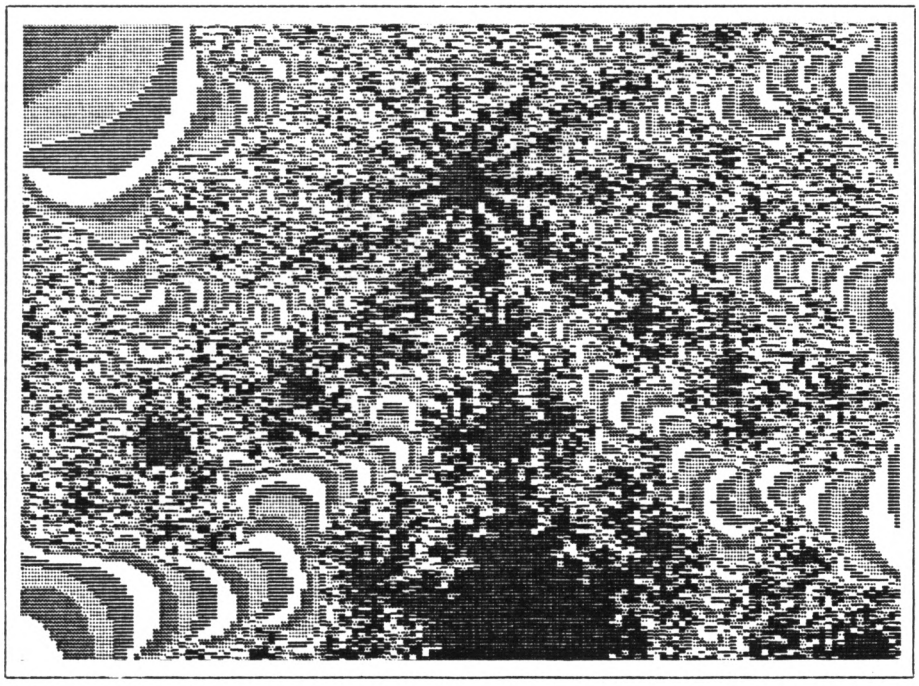
Similarly, Mini Office and Music Studio will simply treat the B: drive as though it had one side, 40 tracks and 178K. So you would need two 3.5" discs to match the storage capacity of a single 3". Still cheaper but *desperately* inaesthetic.

oooxOOxooo

THIS IS *NOT* THE LAST WORD

For example, back at the Schloss, even with our program reference library, we haven't tried any DTP programs. How about Stop Press with ROMDOS, or Fleet Street Willians?

As you know, the strength of WACCI lies not at HQ but with you the members of the club. Anyone with anything to add, write in and tell us, please. We all want to know.



The Final Countdown

HAVE ROMANTIC ROBOT MANAGED TO GET IT RIGHT THIS TIME - MIKE LYONS REPORTS

Romantic Robot's , RODOS, is supposed to be the greatest thing to hit the CPC since disc drives. Well, for some time I've been using version 2.17, which was the only one available until a few weeks ago.

That version is as full of conflicts as Africa but now there's version 2.19 (note that v2.18 didn't quite make the scene.) OMG and Peter Ceresole asked me to have another look.

oooOIOooo

GOODY GOODY

Firstly, in certain areas all versions of RODOS are truly scrumptious. Of the 58 commands you get for your money and the facilities offered these are probably the best:-

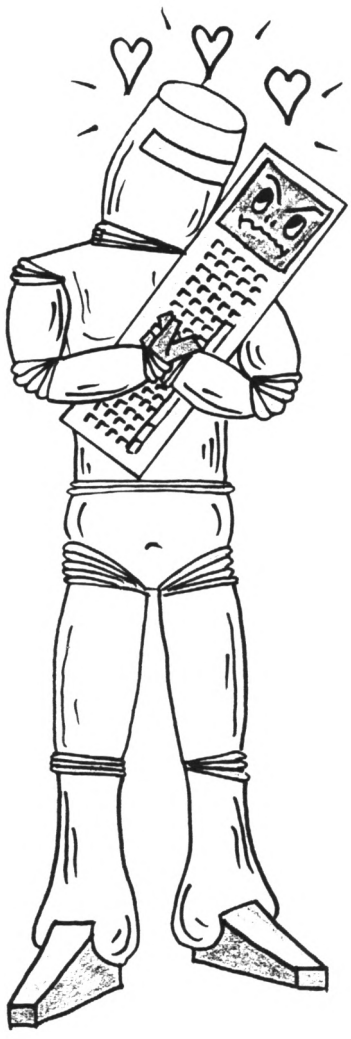
1) The ability to use the extra memory as a RAMdisc, (DRIVE C), and to rename and number any drive to almost anything including a HARD DISC! (I haven't tried this- anybody want to lend me one?)
2) The chance to have a tree-structured directory, using named directories just like MS-DOS on the IBM, which makes keeping track of all your files on large format discs a dream instead of a nightmare.
3) Copying from drive to drive is a doddle and you can even copy from one directory to any other directory keeping the same filename. eg:-

```
|copy,"/LETTERS/WACCI",
     "/DOCUMENTS/WACCI
```

will copy the letter WACCI from the "letters" into the "documents" directory.

```
|copy,"b:","a:WACCI*.**
```

will copy all my work/orders etc to you from drive a to drive b. If you



use the |OPT,n,nn command you can get or suppress all kinds of wonderful messages and other parameters, (like how many times the drive tries to read the disc before giving up!)

4) Being able to use wildcards for virtually any file operation - even renaming in the new filename:-

```
|REN,"WACCI*.**","STUFF*.*
```

5) Being able to use filenames and directory names of up to sixteen characters in length.
6) To make a printer buffer of any size within reason, (or with memory expansion - beyond reason), but more of this later.
7) Random access files from BASIC - great joy for designing your own database.
8) Customisation of RSXs. Call ANY RSX by ANY name you want. For example, if you were allergic to "RENAME" you could call it "NEWNAME".
9) The ability to |DO bar commands, which runs a series of commands contained in an ASCII file exactly like a CP/M SUBMIT file, or to have a |CLI which takes a lot of the pain out of typing such things, very like using the Protext command line. You can forget all those silly quote marks and commas.
10) You can (wo)man-handle MSDOS format discs quite easily if you have the RODOS EXTRA disc (but see Peter Ceresole's experience with this, later on.)
11) You can format discs to anything

up to about 84 tracks in RODOS format giving a massive 819k+. It saves in 0.5K chunks (very efficient compared to 1K in Amsdos or 2K in ROMDOS) I have saved close on 1000 small files onto one disc, thanks to using sub-directories.

oooOIOooo

Apart from all these deeply wonderful things there are also (very awkward) sector editing, ROM enable and disable, change ROM priorities on startup, (even after a reset!)

You can !LINK files, which means they are available across directories or between drives, (useful for printer drivers and other 'common' programs needed by different kinds of document) have a printer SPOOLER, TITLING of discs, ACCESS, (set protection and half a dozen other parameters), double PEEK and POKE, text, hex and graphic dumps of the screen.

All of these goodies work with PROTEXT, PROSPELL, UTOPIA, MAXAM 1.5, BCPL and TMM. This is the good news...

oooOIOooo

UH-OH

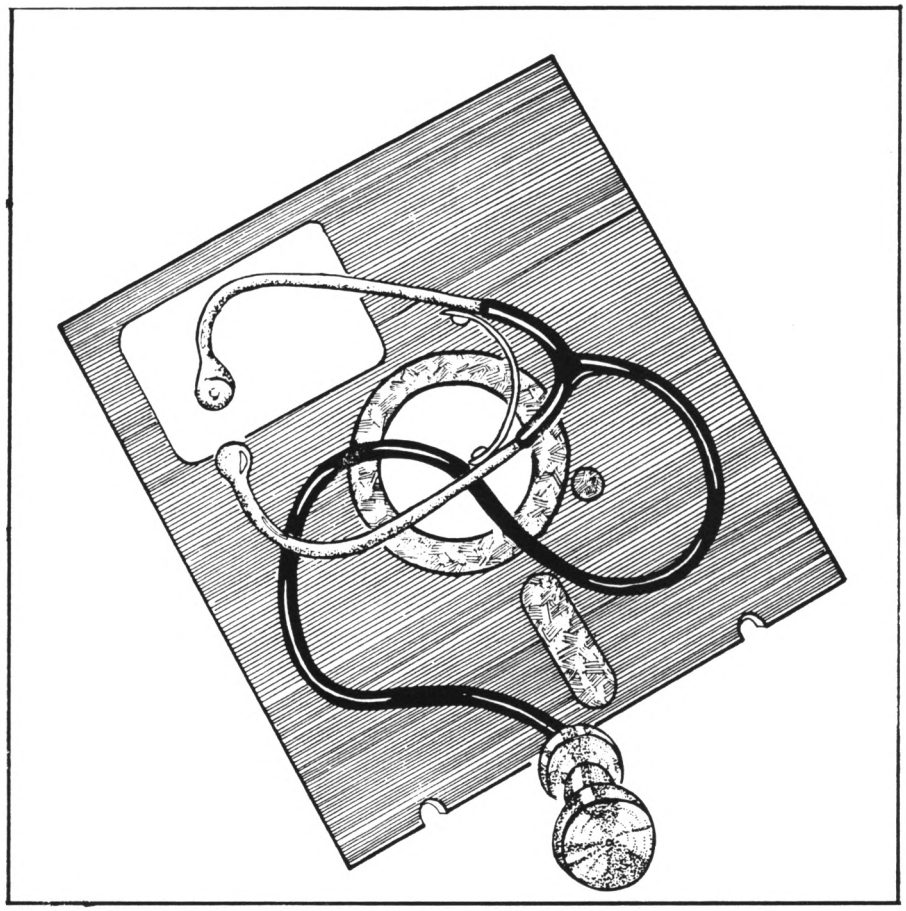
This is the bad. RODOS discs cannot be used with Art Studio, Stop Press, The Music System and CP/M either because these programs refuse to recognise RODOS or because these programs switch ROMS off, or because RODOS takes rather a large amount of workspace and has to be manually switched off.

There's no utility to enable CP/M to work with RODOS discs so any data files generated on RODOS discs can't be used with any CP/M program. Has any of this got better with v2.19?

MAJOR HASSLE SOLVED

A very major problem was that RODOS 2.17 would work fine with PROMERGE+ - until you wanted to print. Try it and you'd see some strange sights on your screen. *Ugghh!*

Well, they've fixed it. In fact, I've printed out this contribution on paper (you know, that thin white stuff with holes and lots of little perforations to let the flavour run out) under PROMERGE+ without a hitch.



SO WHAT ELSE IS NEW?

There were other problems with v2.17, especially in working with other ROMs that I have grown to know and love.

1) The !ALIAS command did not work as indicated in the manual. Try as I might, I couldn't get it to accept parameters for commands in other ROMs. According to the manual this should work:-

```
!ALIAS,"BCAT","4CAT 1"
```

With Utopia in ROM,4 and "CAT 1" being the Utopia command to CAT drive B: (the Utopia CAT is nicer than the RODOS !DIR which doesn't show file sizes.) The above command should get you a CAT of drive B: if you type "!BCAT". Well it didn't work.

It still doesn't. It *will* change command names providing that the command does not need parameters. If it does then hard lines. However, it is quite possible to do something like:-

```
!ALIAS, "DIRECT","DIR @1"
```

This will work because !DIR is a RODOS command. The '@1' refers to a parameter to be passed to the command, (of which there can be 9), but parameters - as I've already said will only be passed to RODOS commands. You still can't use the Utopia command properly.

2) The !COPY command seems to do odd things to certain files - particularly binary files when saving them to a RODOS format disc.
3) The Silly disc can only be formatted to RODOS format. It now tells you that you've chosen a bad format at once. In v2.17 you could quite happily seem to format the silly thing to AMSDOS DATA or SYSTEM format only to be told that the disc was unformatted when you tried to save to the disc.
4) !4INFO, (UTOPIA's !INFO) works in a weird way. It does give you information, but only in the same

way that RODOS's own !INFO command works. Well it still doesn't work properly, and doesn't look as though it's been touched.

5) !ROMS and !ZAP (to run or kill ROMs) are supposed to accept message strings in the parameter list. If, by chance, a message is accepted, it produces gibberish on the screen and behaves just like inadvertent control codes. Well, I've recently discovered that they will accept parameters- but only if you turn OFF RODOS! That is a fat lot of use. If you don't turn RODOS off you still get gibberish.
6) RODOS 2.17 would not let me treat the sides of a double sided drive as separate, even though it was supposed to allow access to both sides independently. Even if you tried to access the tracks as &8A-&94 you still got side one.

   Well a quick peek around the disc with version 2.19 didn't seem any better but then a blinding light shone out of (I'll leave this bit out.) See the section on RODOS Extra for a revelation. Anyway, this was a serious fault in the manual rather than a bug but it feels the same at the time.
7) Using RODOS's printer buffer works fine on a DMP2000 but for some unfathomable reason when used with my brand new (boast, boast) STAR LC24-10 there are long pauses between each line which is daft, considering the speed at which the STAR accepts characters on its own. This is not such a problem now that I can use the buffer in Pronerge+.
8) Last but for me not least, there were a number of problems with v2.17 and PROTEXT. I have all of my correspondence on disc and have two files, (called "DISC" and "DISC2") which are called by the auto boot of RODOS. Quite often this failed and I'd worked out why. The following (shown in Fig 1.) is part of the loader program.

   The printer driver, when loaded from BASIC, over-wrote part of RODOS's workspace and RODOS promptly picked up its marbles and went home. This didn't happen if you loaded a driver from PROTEXT but then wasn't automatic.

```
10 |PRINTER,"codestxt.ptr"   'loads the printer driver automatically from basic before calling Protext.
20 |CD,"/LETTERS":|P   'changes to the letters directory and calls Protext.
```

Fig 1.

Well v2.19 and the !PRINTER command are still incompatible. Now they just fail differently. It can be quite pretty. Other Protext hassles are still there in the new version:-

When using PROTEXT with RODOS format discs, if you want to enter a longer filename plus directory path, you can't use the Protext prompts, you have to enter the command in full.

With a Protext prompt you can only have 16 characters. Without you can have about 36.

```
L /letters/begging/WACCI2002
```

will load your letter from the "begging" subdirectory of the "letters" directory, which is quite wonderful but you can't enter that line if you use the prompt.

What's more, you need to be careful when saving a file, which was originally loaded from a RODOS disc, to an AMSDOS disc. This is not a trivial quibble, as it's the only way you can communicate with the non-RODOS world. *Even if the filename is short*, extra RODOS spaces in the filename are sent to PROTEXT, so if you try to save to an AMSDOS disc using:-

```
s[return][return]
```

even if the filename is something like "Stuff.wac" Protext sends a long filename padded out with spaces, so it won't save and the file has to be renamed. This is a real drag because you can't do quick saves; you spend the best years of your life typing out the file names...

Then, for some reason Protext will no longer print a file directly from disc. Don't know why but if you go "P Filename", it doesn't.

There is another problemette, which is that Pronerge Plus won't mail-merge under RODOS.

Finally, when you load a file from an AMSDOS format disc into PROTEXT you often don't get a filename on the status line- especially with ASCII files. Does this feel like a bit of a list? Yes indeed.

SO WHAT?

Now this may or may not matter to you- as you can see, most of the trouble is with Protext and, whatever Peter C. says, there are other programs on the CPC.

The major hassle with printing has been solved (well done Romantic Robot) but there are still problems.

There's no doubt that Protext, especially Pronerge+, is a tricky beast. If they could get it right with Protext then RODOS would be pretty well unbeatable. If they can't, then even if the fault lies with Protext itself ((which it doesn't -Ed.)) there's a problem for Romantic Robot.

It's no coincidence that most professional users of the CPC (notably Amstrad Action and of course the Mighty Willians) use Protext. The fact is that RODOS *needs* to work really well with Protext. It would also help if Romantic Robot could find a way of getting CP/M to read RODOS discs. Although I don't use it myself there is a growing lot of CP/M jockeys out there. For them, I'd say go with ROM/RAMDOS. But there's more (I hear you groan.)

ooo0X0ooo

THE EXTRA DIMENSION

There's a disc full of demos and utilities, called "RODOS EXTRA". They're designed to show you what can be done using the extra bar commands in the RODOS ROM. Most of them work but I'm a little unimpressed by the

carelessness with which some of them seem to have been put together. Also with the truly dreadful spelling used throughout the disc.

If it were given away free I probably wouldn't complain but I had to pay for my copy of RODOS EXTRA when I bought the ROM.

What is so infuriating to me is that the utilities are *just* short of deeply wonderful. Annoying crashes and sometimes odd effects spoil some good, useful software. A couple of examples should give you an idea...

ooo0I0ooo

SAY AAH!

There is a suite of utilities called Disc Doctor which is really a sector editor with a few whistles added. It will allow you to recover erased files providing that they haven't been over-written. You are given a list of directories and files on the disc and a highlight bar is used to choose one.

Erased files are shown by ***erased*** next to the filename and you are given the option to recover them. You are even given a "trace-back" which shows how much of the file is recoverable!

But it's spoilt by carelessness. When the highlight bar meets an ***erased*** marker it extends itself over two lines instead of one and makes the whole display look untidy. This is also true of screen clearing in this mode - parts of words are often left on the screen.

As a utility, it's very slow but it's the only sensible way of getting at RODOS discs. Now if only you could use CP/M and DU. (Hi, Peter. He says that, amazingly enough, MFU can grope the bytes on RODOS discs even under CP/M. Wottaprog!)

ooo0I0ooo

A MYSTERY SOLVED

A new utility is called 'Tree' and is supposed to give a tree-structured listing of all the files on a disc in their directories, sub-directories etc. Unfortunately this doesn't work with double sided discs. It keeps giving track/sector errors and sometimes goes into an infinite loop. However, it does work beautifully on single sided 3" discs. Let me just have a look at the code....

Back again. I have just used a little ingenuity, two hours of my time and a small sledge hammer to make the basic listing work with a double sided disc. It just needed an allowance making for the setting of the 9th bit on the sector number to indicate the other side (&8B-&94) to the hardware. It's not very elegant, but then I'm not a professional programmer. In fact, thinking about it, I've just made a contribution to science.

The reason I couldn't access side two was because I didn't realise that the sector number is a two byte number - or more accurately a one byte number plus a flag byte! It doesn't tell you this in the manual, only in RODOS Extra, so how could anyone know unless they laid out the extra cash? It effectively means that the sector numbers are &081 (129) to &08A (138) on side 0 and &18B (395) to &194 (404) on side 1. Odd, that. Any 'normal' person would expect the sector numbers to run consecutively. I would - well, maybe not!

MORE GOODIES

There are lots of other utilities on the disc and quite a *nice* menu system.

There's also a *l- a- b- o- r- i- o- u- s- l- y slooow* disccopy, (one track

at a time for up to 82 tracks. Zzzzz). Not quite being normal, I decided to copy from drive B to drive B. 82 disc swaps (Aargh!).

A really useful feature is the wodge of help files which demonstrate !BGET, !POINT, !RANDOM, !BPUT, in fact all the main commands by word and example.

THE VERDICT

Overall, what can you say? RODOS is a huge thing and definitely a major achievement simply for its superb disc filing system. This is what grown-up systems are like.

There are so many other goodies. RODOS is really like a kind of incarnation of everybody's wish list for the CPC and v2.19 is definitely an improvement. *And yet...*

I'm really torn. There are too many incompatibilities with programs that I use all the time. Filing with user numbers and writing them on the disc label may be crude but it works and ROMDOS gives me no compatibility problems to speak of.

Is RODOS now good enough to oust ROMDOS from my ROM socket? Maybe. I'll have to try it out for longer.

oooOIOooo

Now Peter Ceresole writes about another aspect of RODOS EXTRA:-

oooOIOooo

BIG BLUE MOVES

Mike's reviewed the new version of RODOS- but my particular interest is in the Liberation Shuffle- getting the files onto IBM discs. Last month, we reviewed MFU which, under CP/M, can transfer files to and from CPC and MS-DOS discs. This is important; the other day I had to send a piece to someone and they specified that I could send it in on 3.5" disc, Amiga or IBM format. Macs (and STs) can read Big Blue discs too. It's like talking English; shout loud enough and the natives can understand you anywhere (except Glasgow.)

On the RODOS Extra disc there's a utility to do this. It's menu driven and friendly, so I tried it out with a small Protext file. It wouldn't handle that, telling me there was a file type error in line 1420. *Line 1420?* Good Grief, it must be in Basic. Feeling worried I fished out my standard ASCII file, SCRIVNER.DOC which is 113K long. I'd used it to try out MFU. Long files give you the chance to see how fast the transfer is. Or how slow.

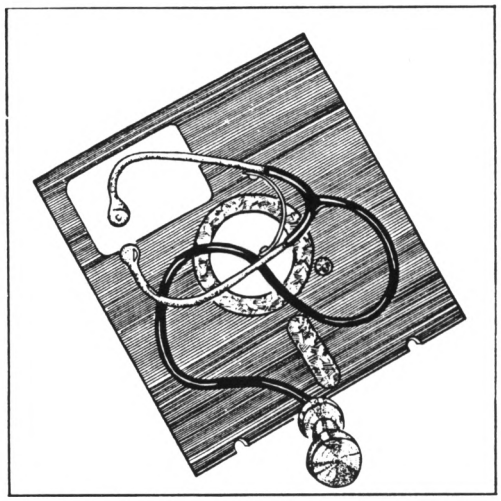
oooOIOooo

OOPS

After *one hour and one minute* in which almost every word of this huge file was echoed to the screen, more slowly than my printer would print it in Letter Quality, it beeped and gave me an error message- Drive B: disc missing. I hit (R)etry and it closed the file. I thought that this might be RODOS's way of telling me the transfer was complete but, when I got it into Wordstar on the office IBM PC, I found that RODOS Extra had indeed fallen over on page 53 of 54. *Huff!!*

Just for reference, MFU transferred the same file without a hitch in 75 seconds.

Warily I began the transfer back from IBM to Amsdos. I couldn't swear to it but it looked as though the echo to screen was slightly quicker. Maybe, if I'd let it go on, it would have done the transfer in 40 minutes.



I didn't wait to find out. There was no point; in its present state, at a transfer rate of some 32 seconds per K, this is not a practical program.

It's a pity. In many ways the RODOS IBM transfer is a more subtle program than MFU. It doesn't overwrite files already on the IBM disc, for example but adds them properly to the directory.

But however subtly it works, the Mandelbrot-like slowness of RODOS Extra would stop me ever using it.

I wonder why it's still in Basic? A machine code routine would probably make it a practical proposition but it seems that in three years or so that it's been out there's not been enough demand to force the change.

Maybe they've been too many other things to fix (early versions were very buggy) and we may yet get a faster version. I hope so. Much of the rest of RODOS is pretty terrific but for IBM transfers it's thumbs down.

The Bellaby File

THE FIFTH IN UNCLE CLIVE BELLAMY'S SERIES ABOUT PROGRAMMING IN COBOL

INTRODUCTION

This month we push the concept of file handling a bit further by introducing Random Access files.

So wind up the old machine, !CPM and we're off.

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FILE HANDLING BACKGROUND

All data files opened under CP/M are opened on a random access basis, it is only the different methods of coding used by Cobol which determines whether the file is sequential or random access.

Sequential files are read one record at a time into the file buffer, starting at the first record and finishing at the last record held in the file. Sequential files have two advantages over random access files; they can be variable length (saving disc space) and are quicker to access (read).

Random access files are read into file buffer one record at a time but you can select which record is read. You do this by using a record key. You put a value into the record key and the program calculates how far into the file that record is. Then it reads the track & sector that contains the record you want.

The main advantage of random access files is that you can read and write records in any order.

CP/M allows you to have up to nine files open at any time but the most I have used is three, so if you use more and encounter errors don't blame me.

Let me now summarise the file types available, they are, Sequential files (fixed length), Sequential (variable length) and Random Access files (fixed length).

DECLARING YOUR FILE(S)

The file type is specified in the ENVIRONMENT & DATA DIVISIONS:-

```
  <SEQUENTIAL FILE - FIXED LENGTH>

ENVIRONMENT DIVISION.

CONFIGURATION SECTION.
 SOURCE-COMPUTER. Amstrad 6128.
 OBJECT-COMPUTER. Amstrad 6128.

INPUT-OUTPUT SECTION.
FILE-CONTROL.
 SELECT FILE-1 ASSIGN DATA-FILE-1.

DATA DIVISION.
FILE SECTION.
 FD FILE-1
  01 RECORD-1.
   03 NAME-1    PIC X(30).
   03 NAME-2    PIC X)30).
   etc
```

```
<SEQUENTIAL FILE - VARIABLE LENGTH>

ENVIRONMENT DIVISION.

CONFIGURATION SECTION.
 SOURCE-COMPUTER. Amstrad 6128.
 OBJECT-COMPUTER. Amstrad 6128.

INPUT-OUTPUT SECTION.
FILE-CONTROL.
 SELECT FILE-2 ASSIGN DATA-FILE-2.

DATA DIVISION.
FILE SECTION.
 FD FILE-2
 RECORD 6 TO 80.
  01 RECORD-2.
   03 NAME-1    PIC X(30).
   03 NAME-2    PIC X(30).
   etc

* the RECORD command can be followed
* by any two values. The values used
* are not important; provided two
* values are included the record
* will be treated as variable length
```

And finally, to declare your random access files:-

```
      < RANDOM ACCESS FILE >

ENVIRONMENT DIVISION.

CONFIGURATION SECTION.
 SOURCE-COMPUTER. Amstrad 6128.
 OBJECT-COMPUTER. Amstrad 6128.

INPUT-OUTPUT SECTION.
FILE-CONTROL.
SELECT FILE-3 ASSIGN DATA-FILE-3
 ORGANIZATION RELATIVE
 ACCESS RANDOM
        RELATIVE RECORD-NUMBER.

DATA DIVISION.
FILE SECTION.
 FD FILE-3.
  01 RECORD-3.
   03 NAME-3    PIC X(30).
   03 etc
```

```
* When random access file are used
* the RECORD KEY used must be
* declared in the WORKING-STORAGE
* SECTION, the RECORD KEY in this
* example is RECORD-NUMBER.

WORKING-STORAGE SECTION.

* Random Access File - Record Key
* the record key must be a numeric

01 RECORD-NUMBER PIC 99.
```

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FILE HANDLING

After you have declared your file type(s) you need to be able to read and write data to the files.

Sequential files (fixed & variable) use different commands from Random Access files.

```
<SEQUENTIAL FILE HANDLING COMMANDS>

OPEN INPUT FILE-1.

OPEN OUTPUT FILE-1.

CLOSE FILE-1.

READ FILE-1 END ......
(read the file; when the end of the
file is reached then do something)

READ FILE-1 INVALID ......
(read the file; at EOF or on read
error then do something)


WRITE RECORD-1

WRITE RECORD-1 INVALID ......
(write the record to disc, and if
an error occurs then do something)
```

Notes:-

There are some restrictions on the use of the files:-

1) Files which have been opened as input can only be read from. If you write to a file which has been opened as input then a fatal error will occur and your program will crash, so take care.

2) Files opened as output can only be written to.

3) There's another limitation peculiar to the PD version of Cobol; it will only allow you to open a file once in a program, so if you open a file as input, you cannot close the file and then open it as output.

Now for random access files:-

```
   <RANDOM ACCESS FILE COMMANDS>

OPEN I-O FILE-3

CLOSE FILE-3.

READ FILE-3 END .....

READ FILE-3 INVALID ......

REWRITE RECORD-3

REWRITE RECORD-3 INVALID
```

Notes:-

Random access files have restrictions on their use:-

1) Before using the READ & REWRITE commands you must ensure that the record key contains the number of the record that you wish to read or rewrite.

2) Before using the REWRITE command the record must have been read, after all you cannot rewrite a record that does not exist.

3) Normal practice is to create the random access file as a sequential file (in a separate program) before it is used.

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CREATING DATA FILES

If you need to create a data file for use in a program, there are two usual methods of achieving this.

You can write a Cobol program or go back into Basic and write a short routine which creates the data file.

The following programs both create a data file containing five records of 30 spaces.

```
          << COBOL >>

IDENTIFICATION DIVISION.
 PROGRAM-ID. Create a data file.
ENVIRONMENT DIVISION.
CONFIGURATION SECTION.
 SOURCE-COMPUTER. Amstrad 6128.
 OBJECT-COMPUTER. Amstrad 6128.
INPUT-OUTPUT SECTION.
 FILE-CONTROL.
  SELECT NAME-FILE ASSIGN NAMES.DAT.
DATA DIVISION.
 FILE SECTION.
  FD NAME-FILE.
   01 NAME    PIC X(30).
WORKING-STORAGE SECTION.
 01 NAME-NUMBER    PIC 9.
 01 BUFFER-1       PIC X(30).
PROCEDURE DIVISION.
OPEN-FILE.
 OPEN OUTPUT NAME-FILE.
 MOVE 0 TO NAME-NUMBER.
 MOVE SPACE TO BUFFER-1.
 PERFORM CREATE-FILE 5 TIMES.
PROGRAM-END.
 CLOSE NAME-FILE.
 STOP RUN.
CREATE-FILE.
 ADD 1 TO NAME-NUMBER.
 MOVE BUFFER-1 TO NAME.
 WRITE NAME INVALID
  DISPLAY 'ERROR WHEN SAVING DATA'.
```

and now the same program using,

```
          << BASIC >>

10 OPENOUT "names.dat"
20 FOR i=1 to 5
30 PRINT #9,space$(30)
40 NEXT i
50 CLOSEOUT
```

This shows the versatility of the Amstrad CPCs which allow you more than one way of achieving the same result.

The problems caused by using Basic are that you need to drop out of CP/M, and the method cannot be used in the middle of a large program as it would really confuse the user. Well, it would certainly confuse me...

RANDOM ACCESS FILES

Now to test the use of Random Access files. We're back to writing short demonstration programs.

Remember, if you are not a fan of typing in listings then the example programmes used can be obtained from WACCI at 4p per k, or you can buy the complete WACCI disc (along with lots of interesting and useful routines) for a lot less per k.

Programs 1 to 17 are in the Homegrown library, AMS-202, 22k
Programs 18 to 22 are now in the Homegrown library, AMS-218, 9k

Program Eighteen creates the data file and Program Nineteen uses it.

PROGRAM EIGHTEEN

```
IDENTIFICATION DIVISION.
 PROGRAM-ID. Program Eighteen.

* This programme creates a data file
* 'RANDOM.DAT' which is used by
* programs nineteen & twenty

* The data file is created as a
* sequential file

ENVIRONMENT DIVISION.

CONFIGURATION SECTION.
 SOURCE-COMPUTER. Amstrad 6128.
 OBJECT-COMPUTER. Amstrad 6128.

INPUT-OUTPUT SECTION.
 FILE-CONTROL.
 SELECT RANDOM-FILE ASSIGN RANDOM.DAT
*
DATA DIVISION.

FILE SECTION.
 FD RANDOM-FILE.
  01 NAME   PIC X(30).

PROCEDURE DIVISION.

OPEN-FILE.
 DISPLAY ' '.
 DISPLAY 'Creating File,
                     Please Wait'.
 OPEN OUTPUT RANDOM-FILE.

CREATE-FILE.
 MOVE 'Bellaby' TO NAME.
 WRITE NAME.
 MOVE 'Williams' TO NAME.
 WRITE NAME.
 MOVE 'Kennedy' TO NAME.
 WRITE NAME.
 MOVE 'Adams' TO NAME.
 WRITE NAME.
 MOVE 'Morley' TO NAME.
 WRITE NAME.
 MOVE 'Wacci' TO NAME.
 WRITE NAME.
 MOVE 'Dwerryhouse' TO NAME.
 WRITE NAME.
 MOVE 'Campbell' TO NAME.
 WRITE NAME.
 MOVE 'Tilling' TO NAME.
 WRITE NAME.

END-PROGRAM.
 CLOSE RANDOM-FILE.
 STOP RUN.
```

And the next bit:-

PROGRAM NINETEEN

```
IDENTIFICATION DIVISION.
 PROGRAM-ID. Program Nineteen.

* This program  uses the data file
* 'RANDOM.DAT' as a  random access
* file.

* Create the  file  using  program
* eighteen first...

ENVIRONMENT DIVISION.

CONFIGURATION SECTION.
 SOURCE-COMPUTER. Amstrad 6128.
 OBJECT-COMPUTER. Amstrad 6128.

INPUT-OUTPUT SECTION.
 FILE-CONTROL.
  SELECT RANDOM-FILE ASSIGN
                          RANDOM.DAT
  ORGANIZATION RELATIVE
  ACCESS RANDOM RELATIVE
                     RECORD-NUMBER.
*
DATA DIVISION.

FILE SECTION.
 FD RANDOM-FILE.
  01 NAME           PIC X(30).

WORKING-STORAGE SECTION.

01 RECORD-NUMBER    PIC 9.
01 KEYBOARD-ENTRY   PIC X.

PROCEDURE DIVISION.

OPEN-FILE.
 DISPLAY ' '.
 DISPLAY 'Opening File,
                     Please Wait'.
 DISPLAY ' '.
 OPEN I-O RANDOM-FILE.

DISPLAY-FILE.
 MOVE 0 TO RECORD-NUMBER.
 PERFORM READ-FILE 9 TIMES.

DISPLAY-MESSAGE.
 DISPLAY ' '.
 DISPLAY
    'Enter a number, range 0 - 9'.
 DISPLAY '( 0 End Programme )'.
 DISPLAY
     '( 1 to 9 Displays Record )'.
 ACCEPT KEYBOARD-ENTRY.
 IF KEYBOARD-ENTRY NOT NUMERIC
  PERFORM NON-NUMERIC-ENTRY
  GO DISPLAY-FILE
 END-IF.


CHECK-IF-ZERO.
 MOVE KEYBOARD-ENTRY TO
                   RECORD-NUMBER.
 IF RECORD-NUMBER EQUAL 0
  DISPLAY ' '
  DISPLAY 'End Program Selected'
  DISPLAY ' '
  DISPLAY
       'Closing File, Please Wait'
  CLOSE RANDOM-FILE
  STOP RUN
 END-IF.

DISPLAY-RECORD.

 MOVE KEYBOARD-ENTRY TO
                   RECORD-NUMBER.
 READ RANDOM-FILE INVALID
  PERFORM READ-ERROR.
```

```
 DISPLAY ' '.
 DISPLAY 'Record Number '
         RECORD-NUMBER
        '   '
         NAME.

 DISPLAY ' '.
 DISPLAY
      'Press RETURN to try again'.
 ACCEPT KEYBOARD-ENTRY.
 GO DISPLAY-FILE.

         ***************
         * SUBROUTINES *
         ***************

READ-FILE.
 ADD 1 TO RECORD-NUMBER.
 READ RANDOM-FILE INVALID
  DISPLAY 'Read Error, Record '
          RECORD-NUMBER.

 DISPLAY 'Record No. '
         RECORD-NUMBER
        '   '
         NAME.

NON-NUMERIC-ENTRY.
 DISPLAY ' '.
 DISPLAY 'Non-Numeric Entry'.
 DISPLAY 'Press Return To Redo.'.
 ACCEPT KEYBOARD-ENTRY.
 DISPLAY ' '.

READ-ERROR.
 DISPLAY 'Read Error '
         RECORD-NUMBER
        ' Press Return To Abort'.
 DISPLAY ' '.
 ACCEPT KEYBOARD-ENTRY.
 DISPLAY ' '.
 GO DISPLAY-FILE.
```

Neither program is exciting but they demonstrate the principle involved and are relatively easy to read and understand.

The random access program works very quickly in this case, because the all the records fit into the disc buffer and the buffer is treated as an area of direct access Ram. Larger files will be slower as the program will need to read the file into the buffer more than once.

I will expand on these programs next month with two more programs, which will demonstrate:-

The REWRITE command
An alphabetic sort

Come on folks- can you bear to wait!?

cobOLCObol

FINALLY... RESERVED WORDS

This is a subject worth getting right because mistakes can be most embarrassing and almost terminally confusing.

Reserved words are those which have a particular meaning within a computer language; they can only be used within a program in their pre-defined role (like PRINT in Basic.)

However a reserved word can form part of a larger word within a program (like PRINT$.)

For example, VALUE is a reserved word in Cobol, so you cannot use VALUE unless it forms part of a larger word, so CALCULATE-VALUE is okay.

The Cobol document file does not contain a list of reserved words, so I hacked into the Cobol compiler using SID and discovered the full? list of reserved words used in the PD version of Cobol. Here's a list on the right.

cobOLCObol››››››››››››››

Take a copy of this list and keep it handy, as using a reserved word as an identifier will cause several unusual errors when you compile your program.

cobOLCobol››››››››››››››

That's it for now, write or phone your uncle Clive if you get stuck; you know I actually enjoy hearing from you so don't be shy.

T.T.F.N. and I.T.M.A.

That dates me, *doesn't it?*

Clive Bellaby,
12, Trafalgar Terrace,
Long Eaton
Nottingham
NG10 1GP

0602-725108

ACCESS	ACCEPT
ADD	ADVANCING
AFTER	ALPHABETIC
ASSIGN	AUTHOR
BEFORE	BLOCK
BY	CALL
CLOSE	COMP
COMP-3	COMPUTATIONAL
CONFIGURATION	DATA
DATE-WRITTEN	DEBUGGING
DELETE	DEPENDING
DISPLAY	DIVIDE
DIVISION	ELSE
END	END-IF
ENVIRONMENT	EQUAL
ERROR	EXIT
FD	FILE
FILE-CONTROL	FILLER
FROM	GO
GREATER	IDENTIFICATION
IF	INDEXED
INPUT	INPUT-OUTPUT
INSTALLATION	INTO
INVALID	I-O
I-O-CONTROL	LABEL
LEADING	LEFT
LESS	LINKAGE
MODE	MOVE
MULTIPLY	NEXT
NOT	NUMERIC
OBJECT-COMPUTER	OCCURS
OF	OMITTED
OPEN	ORGANIZATION
OUTPUT	PAGE
PERFORM	PIC
PROCEDURE	PROGRAM-ID
QUOTE	RANDOM
READ	RECORD
RECORDS	REDEFINES
RELATIVE	REWRITE
RIGHT	ROUNDED
RUN	SAME
SECTION	SECURITY
SELECT	SEPARATE
SEQUENTIAL	SIGN
SIZE	SOURCE-COMPUTER
SPACE	STANDARD
STOP	SUBTRACT
SYNC	TIMES
THRU	TO
TRAILING	UNTIL
USAGE	USING
VALUE	VARYING
WORKING-STORAGE	WRITE
ZERO	

the wacci fsw library

PROBABLY THE BEST LITTLE LIBRARY IN THE WORLD

LOOSE PUBLIC DOMAIN SOFTWARE - Copying charge = 4p per K

To obtain loose PD software, fill in the FSW Library order form and send it with a CF2 disc or discs (330K maximum per disc) in a Jiffy bag, plus the correct charge (min £2), to WACCI HQ. The copying charge is 4p per K. (four pence per Kilobyte). The CP/M programs have been tested by WACCI on an Amstrad CPC6128 computer. Although the programs have been tested, they are supplied on an as-is basis. WACCI accepts no liability for faults or non-operation.

CPM-001: BINCALC ..... 10K - *On-screen calculator.*
CPM-002: COMPARE ..... 10K - *Compares two files for differences.*
CPM-003: LOOK ..... 12K - *Views and Edits ascii and binary files.*
CPM-004: MDDT ..... 11K - *Improved version of DDT.*
CPM-005: MSWP ..... 37K - *Disc and file management utility.*
CPM-006: QK20 ..... 10K - *Assigns character strings to keys.*
CPM-007: RASMB ..... 17K - *Z80 reverse assembler.*
CPM-008: UNERA ..... 2K - *Unerases erased files.*
CPM-009: XIZI ..... 22K - *8080 to Z80 to 8080 code translator.*
CPM-010: ZMAC+ZLINK ... 40K - *Z80 assembler and linker.*
CPM-011: CONV2 ..... 3K - *Converts CP/M 2.2 files to CP/M Plus.*
CPM-012: LASM ..... 10K - *Improved version of ASM.*
CPM-013: LOHD ..... 2K - *Improved version of LOAD.*
CPM-014: Z80ASM ..... 15K - *Z80 assembler.*
CPM-015: Z8E ..... 190K - *Z80 debugging monitor and assembler.*
CPM-016: ZDEBUG ..... 31K - *Non-symbolic Z80 debugging tool.*
CPM-017: SMALL-C ..... 157K - *Floating-point version of the language.*
CPM-018: SCI ..... 59K - *Small-C-Interpreter.*
CPM-019: KBASIC ..... 84K - *Compiles a subset of Basic to m/code.*
CPM-020: LISP ..... 81K - *The essence of a Lisp interpreter.*
CPM-021: KPRO ..... 37K - *A version of the Prolog language.*
CPM-022: CHEK ..... 5K - *Checks disc quality.*
CPM-023: D ..... 4K - *Directory utility.*
CPM-024: DISKDOC ..... 11K - *Disc doctor (not sure how it works).*
CPM-025: DISPLAY ..... 5K - *Displays text files f/wards or b/wards.*
CPM-026: ED.DOC ..... 22K - *Instruction file for ED.COM*
CPM-027: FORM3 ..... 3K - *Allows CP/M+ owners to read PCW discs.*
CPM-028: GREP ..... 13K - *Emulates the UNIX grep command.*
CPM-029: LOOKAT ..... 3K - *Dumps files in ascii format.*
CPM-030: RPIP ..... 8K - *Improved version of PIP.*
CPM-031: SD ..... 4K - *Directory utility.*
CPM-032: SETCOLOUR .... 12K - *CP/M 2.2 easy colour-change command.*
CPM-033: SORT ..... 4K - *Sorts the contents of text files.*
CPM-034: VLIST ..... 2K - *Controls text file scrolling speed.*
CPM-035: WCOUNT ..... 7K - *Counts the words in text files.*
CPM-036: LBRDISK ..... 16K - *A library utility.*
CPM-037: DU ..... 44K - *Powerful disc sector editor.*
CPM-038: NULU15 ..... 82K - *Improved version of Library Utilty (LU).*
CPM-039: WRDCOUNT ..... 26K - *Another word-counter.*
CPM-040: ADVENT ..... 101K - *Big text-only adventure.*
CPM-041: TRAM-GEN ..... 22K - *Scoresheet generator.*
CPM-042: USERFUNC ..... 12K - *A small library of Basic DEF FNs.*
CPM-043: BIO ..... 14K - *Biorhythm chart generator.*
CPM-044: CAL ..... 6K - *Calendar generator.*
CPM-045: CHESS ..... 26K - *CP/M 2.2 version of the board game.*
CPM-046: GOLF ..... 26K - *A text-only swipe round the golf course.*
CPM-047: MAZE ..... 3K - *Maze generator.*
CPM-048: NEWPUZ ..... 25K - *Wordsearch generator.*
CPM-049: OTHELLO ..... 22K - *Version of the board game.*
CPM-050: UKM7 ..... 26K - *Comms utility adapted from MODEM7.*
CPM-051: INVENT ..... 35K - *Inventory database.*
CPM-052: VDE ..... 76K - *Fast, powerful word processor.*
CPM-053: SPELL ..... 33K - *Spelling checker with dictionary.*
CPM-054: SCRIVENER ... 194K - *Relational spreadsheet/database.*
CPM-055: JRT PASCAL .. 208K - *Floating-point, standard version.*
CPM-056: JRT MANUAL .. 200K - *Manual on disc for the above language.*
CPM-057: COBOL ..... 97K - *MPS Micro-Cobol v2.1.*
CPM-058: FORTH ..... 54K - *16K version, can be enlarged easily.*
CPM-059: STOIC ..... 62K - *A version of the language.*
CPM-060: EXPERT86 ..... 52K - *A very good expert system.*
CPM-061: MEX ..... 141K - *Modem EXecutive comms utility.*
CPM-062: KERMIT ..... 28K - *Comms utility for little green frogs*
CPM-063: LUCKY13 ..... 11K - *Lottery number generator and checker*
CPM-064: LOGAN ..... 15K - *LOGic ANalyser and frequency counter*
CPM-065: WSCLEAN ..... 4K - *Clears the high bits from text files*
CPM-066: OPT ..... 21K - *A Three Pass Optimiser for Small C*
CPM-067: STARTREK ..... 11K - *Scotty's in there again.*
CPM-068: HEXTO .. .. 18K - *Make DATA loaders from HEX files*
CPM-069: MAKELCAT ..... 57K - *Print out a catalogue of all your files*
CPM-070: MAKEASM ..... 17K - *Converts ZMAC files to source for JRTASM*
CPM-071: BOTRK ..... 59K - *Stick a 5.25" drive on your CPC*
CPM-072: ZSM ..... 24K - *PD assembler*
CPM-073: DISZ80 ..... 22K - *Z80 op-codes into Zylog, 696 mnemonics*
CPM-074: CPM2TO3 ..... 7K - *Run 2.2 programs under CP/M Plus*
CPM-075: XRAS..... 160K - *Scrolling bulletin board host program*
CPM-076: MFT ..... 3K - *Easy one-drive Multi File Transfer.*

CPM-077: CRUNCH/UNCR .. 17K - *User-friendly file squeezer.*
CPM-078: SIDEWAYS ..... 34K - *Prints spreadheets sideways.*
CPM-079: DISCKITA ..... 31K - *General purpose disk formatter +*
CPM-080: CLEANUP ..... 3K - *Slicker file erasing and typing.*
CPM-081: SUPERZAP ..... 27K - *A full screen interactive disc utility*
CPM-082: PASSWORD ..... 3K - *Protect your programs from prying eyes*
CPM-083: SCRAMBLE ..... 2K - *Similar to PASSWORD but trickier.*
CPM-084: DISPLAY ..... 5K - *A smart text reader.*
CPM-085: FILECHOP ..... 6K - *Breaks down ANY program.*
CPM-086: LIST ..... 3K - *Improve the appearance of listings.*
CPM-087: MAKE ..... 3K - *Simplifies area user changes.*
CPM-088: NEWCCP ..... 9K - *Adds extra commands to CP/M.*
CPM-089: PCW ..... 3K - *Read AND write to PCW formatted discs.*
CPM-090: RPSETUP ..... 11K - *Configuration program for Epson printers*
CPM-091: B29 ..... 47K - *NSWP workalike, views COM files as well.*
CPM-092: NFT+ ..... 3K - *Multi File Transfer with two drives.*
CPM-093: PRINT ..... 7K - *Text file printing aid.*
CPM-094: RESCUE ..... 6K - *rescues corrupted discs*
CPM-095: CRCBUILD ..... 3K - *Catalogue your discs. (CP/M 2.2)*
CPM-096: MCAT ..... 23K - *Catalogue your discs. (CP/M +)*
CPM-097: EDIT ..... 16K - *A text editor.*
CPM-098: FINST ..... 40K - *Cardbox filer program.*
CPM-099: SHELL ..... 7K - *CP/M menu driven environment.*
CPM-100: BDO4 ..... 6K - *Checks discs for bad sectors and files.*
CPM-101: ALLDIR ..... 1K - *(2.2) All User Area DIRs.*
CPM-102: UDIR ..... 1K - *CP/M+ All User Area DIRs.*
CPM-103: VIEW ..... 6K - *Prints ANY file to the screen.*
CPM-104: OSB2AMS ..... 6K - *Run Osbourne CP/M programs on the CPC.*
CPM-105: ANDYBASE..... 56K - *Powerful database program.*
CPM-106: VDE266 ..... 161K - *The ultimate version of CPM-052*
CPM-107: XOX ..... 9K - *Pascal version of noughts and crosses.*
CPM-108: RDMS ..... 55K - *Read MS-DOS files.*
CPM-109: UNERA ..... 6K - *Recover erased files.*
CPM-110: STATUS ..... 12K - *Displays the current status of your CPC.*
CPM-111: PACMAN ..... 24K - *CP/M version of the arcade game.*
CPM-112: MAKEBATCH ..... 4K - *Easy creation of submit files.*
CPM-113: ANDYBASE ..... 56K - *Powerful databse.*
CPM-114: TORNADO ..... 15K - *Graphics, colour and sound under CP/M2.2*
CPM-115: CLS ..... 1K - *Clear screen under CP/M.*
CPM-116: INSTALL.VDE ...11K - *A guide to installing VDE on the CPC.*

LOOSE HOMEGROWN SOFTWARE - Copying charge = 4p per K

To obtain loose HG software, fill in the FSW Library order form and send it with a CF2 disc or discs (330K maximum per disc) in a Jiffy bag, plus the correct charge (min £2), to WACCI HQ. The copying charge is 4p per K. (four pence per Kilobyte.) The AMS programs have been tested by WACCI on an Amstrad CPC6128 computer. Although the programs have been tested, they are supplied on an as-is basis. WACCI accepts no liability for faults or non-operation.

AMS-001: MASTERS OF MIDWORLD . 29K - *Graphical adventure.*
AMS-002: MINIMON ..... 4K - *Mini machine-code monitor.*
AMS-003: CHARDES ..... 3K - *Big-character designer.*
AMS-004: HEADER READER ..... 2K - *Colourful tape header reader.*
AMS-005: FRUIT WORM ..... 4K - *The old caterpillar/fly type game.*
AMS-006: OTHELLO ..... 6K - *Reversi simulation.*
AMS-007: FOUR IN A ROW ..... 6K - *Version of Connect 4 board game.*
AMS-008: THE WORLD ..... 26K - *Graphics demo of Earth spinning.*
AMS-009: CHAT ..... 5K - *Based on the famous Eliza.*
AMS-010: JIGSAW-1 ..... 34K - *Educational jigsaw.*
AMS-011: EDDY ..... 15K - *Good text editor for all CPCs.*
AMS-012: XOX ..... 3K - *Two player noughts and crosses.*
AMS-013: POMTOON ..... 37K - *You against the computer.*
AMS-014: PROGDOC ..... 33K - *Programmer's utility.*
AMS-015: HELPING HAND ..... 5K - *Decision aid.*
AMS-016: BOMBER ..... 4K - *Bomb the town & land your plane.*
AMS-017: LIFE ..... 4K - *The Game of Life.*
AMS-018: LOCK'n'KEY ..... 8K - *Maze game.*
AMS-019: TUNNEL DIVE ..... 4K - *Freefall game.*
AMS-020: HEAD ..... 3K - *Tape or disc header reader RSX.*
AMS-021: MENDATA+ ..... 3K - *H/code into data statements.*
AMS-022: KEYDEF ..... 2K - *Single keypress command typing.*
AMS-023: CHAMPIONSHIP DARTS .. 12K - *Bonk... Bonk... Bonk...*
AMS-024: GRID WARRIOR ..... 4K - *Another caterpillar/fly game.*
AMS-025: JIGSAW-2 ..... 51K - *Educational jigsaw.*
AMS-026: STAR CHASE ..... 11K - *Space shoot-em-up.*
AMS-027: UFO ESCAPE ..... 18K - *Maze game.*
AMS-028: HEADLESS ..... 3K - *Headerless file tape to disc.*
AMS-029: BEETLEMANIA ..... 31K - *Machine-code game.*
AMS-030: DISC ..... 2K - *Intelligent disc menu.*
AMS-031: SDUMP ..... 10K - *Five mode 1 & 2 screen dumps.*
AMS-032: ENGLEBERT ..... 8K - *Bert game.*
AMS-033: GLOBE ..... 7K - *view Earth from space.*
AMS-034: MULTIPROG ..... 2K - *Holds 4 Basic progs in a 2nd 64K.*
AMS-035: PIXELPLOTTER ..... 5K - *6128 Etch-a-Sketch program.*
AMS-036: STORY ..... 12K - *Zany prog that invents stories.*
AMS-037: FUNCTDR ..... 2K - *Plots graphs of matha functions.*
AMS-038: FUNCTSOL ..... 2K - *Solves quadratic equations.*
AMS-039: FORMULAE ..... 3K - *Mixes chemicals.*
AMS-041: CGEN ..... 6K - *Icon-driven character generator.*
AMS-042: EXCAT ..... 5K - *Extended cat to screen/printer.*
AMS-043: EXPRINT ..... 5K - *Prints ascii chars) 127.*
AMS-044: PROFORMA ..... 2K - *Cassette filing sheets to a DMP1.*
AMS-045: NEATLIST ..... 4K - *Emulates the BBC's LISTO command.*
AMS-046: ROMREAD ..... 3K - *Tells you about your roms.*
AMS-047: SYMPHONY ..... 4K - *Kalaedoscope pattern generator.*
AMS-048: AMSIG ..... 173K - *Mandlebrot Set Generator.*
AMS-049: DRIPZONE ..... 54K - *Addictive machine-code game.*
AMS-050: DISCED ..... 5K - *Disc sector editor RSX.*
AMS-051: STARFIRE ..... 25K - *Machine code zap-em-up game.*

AMS-052: SCANNER ..... 2K - *Scans lots of ASCII files.*
AMS-053: BOUNCER ..... 4K - *A version of Breakout.*
AMS-054: BASIC+ ..... 13K - *45 new commands to Basic.*
AMS-055: LABEL PRINTER ..... 6K - *Single address labels.*
AMS-056: MISSILE ..... 6K - *A version of Missile Command.*
AMS-057: SKETCH & PROGRAM ..... 8K - *Turns sketches into prog lines.*
AMS-058: SYNTH ..... 3K - *3-channel keyboard sound.*
AMS-059: HOTRODS ..... 6K - *Race game.*
AMS-060: BREAKOUT ..... 3K - *Yawn.*
AMS-061: DEPRO ..... 2K - *Load and list protected Basic.*
AMS-062: DIS ..... 5K - *Good Z80 disassembler.*
AMS-063: PAIRS ..... 4K - *A version of Pelmanism.*
AMS-064: XREF ..... 15K - *A Basic cross-reference utility.*
AMS-065: MACHON ..... 16K - *Versatile machine-code monitor.*
AMS-066: MUSIC COMPOSER ..... 14K - *Compose one-channel melodies.*
AMS-067: LOGOPOLIS ..... 15K - *Version of Logo.*
AMS-068: MATHS MAGIC ..... 11K - *For numerical freaks.*
AMS-069: BREAKER ..... 3K - *Dumps screens to disc.*
AMS-070: DISC MENAGERIE ..... 29K - *Good disc utility.*
AMS-071: NOSEY ..... . 4K - *Edit memory and banks, view roms.*
AMS-072: SPRITES ..... . 6K - *Mode 0 sprite designer.*
AMS-073: SQUEEZER ..... . 4K - *Squeezes ascii files.*
AMS-074: CAVERNS OF SKELETOR 14K - *Multi-coloured maze game.*
AMS-075: ZENER CARDS ..... 23K - *ESP test.*
AMS-076: SUM-VADERS ..... . 7K - *Educational maths game.*
AMS-077: ASTROSUITE ..... 35K - *Find out about space.*
AMS-078: TEXT & PROGRAM ..... . 3K - *Text screens into program lines.*
AMS-079: WORDY ..... 27K - *Advanced text editor.*
AMS-080: TRIVIA QUIZ ..... 72K - *2 to 4 player quiz.*
AMS-081: PROTO ..... 16K - *Good Z80 assembler.*
AMS-082: CHESS CLOCK ..... 10K - *For chess freaks.*
AMS-083: DEFFONT ..... 14K - *Excellent character generator.*
AMS-084: CALENDAR ..... . 7K - *Calendar generator.*
AMS-085: SNOOKER SCOREBOARD . . 4K - *For snooker freaks.*
AMS-086: PATIENCE ..... 9K - *The soitaire card game.*
AMS-087: AUTOLINE ..... 3K - *Intelligent graphics demo.*
AMS-089: CRUNCH ..... 8K - *Educational Pacman.*
AMS-090: CALCULATOR ..... 21K - *Scientific calculator.*
AMS-091: FONT ..... 8K - *40-column text in Mode 0.*
AMS-092: FIRMWARE EXPLORER .... 5K - *Similar to Regiload.*
AMS-093: GOMOKU ..... . 5K - *Hybrid of Othello & Connect Four.*
AMS-094: MENU ..... . 4K - *Intelligent disc menu.*
AMS-095: OTHELLO ..... . 9K - *Another version of Reversi.*
AMS-096: UDGRAB ..... . 6K - *Grab user-defined graphics.*
AMS-097: STYLE ..... . 2K - *Analyses documents.*
AMS-098: DISCMAP ..... . 3K - *Maps sectors on any format disc.*
AMS-099: TAPE RSXS ..... . 2K - *Quick save and load screens.*
AMS-100: VIEWFAX ..... 12K - *A Teletext type system.*
AMS-101: GO ..... 15K - *Ancient Chinese strategy game.*
AMS-102: DI-SYMM ..... 2K - *A colourful pattern generator.*
AMS-103: AGE ..... 4K - *GEM type windows generator.*
AMS-104: SNAKES ..... 5K - *A game (I think).*
AMS-105: OZ ..... 4K - *Addictive peg-and-holes game.*
AMS-106: FRACTAL ..... 11K - *CPC conversion of Macfractal.*
AMS-107: TEE-OFF ..... 12K - *Golf game.*
AMS-108: PRIMES ..... 2K - *Calcuates prime numbers.*
AMS-109: SOUNDFX ..... 2K - *Explode, Ping, Bang, Zap RSXs.*
AMS-110: PHARAOH ..... 9K - *Maze and beasties game.*
AMS-111: SHIFTY ..... 10K - *Educational jigsaw type game.*
AMS-112: DIAMOND MINER ..... 8K - *Underground hunt for jewels.*
AMS-113: CRAZY MAZE ..... 5K - *Maze game.*
AMS-114: PATHFINDER ..... 8K - *Confuzion type game.*
AMS-115: SPELLBOUND ..... 17K - *Educational spelling tug-of-war.*
AMS-116: GRAPHIC MAGIC ..... 9K - *Mode 0 screen designer.*
AMS-117: JIGSAW-3 ..... 92K - *Jigsaw game (includes 5 jigsaws).*
AMS-118: WRITE IT RIGHT ..... 12K - *Educational word game.*
AMS-119: SHEEPDOG ..... 5K - *One man and his computerised dog.*
AMS-120: MONOPOLY ..... 20K - *Variant on the board game.*
AMS-121: BACKGAMMON ..... 40K - *Plays a hard game, but addictive.*
AMS-122: DOMINOES ..... 30K - *Fives and Threes.*
AMS-123: DYS-SYMM2 ..... 5K - *Colourful pattern generator*
AMS-124: PRINTER ..... 2K - *Printer setup utility.*
AMS-125: SDM ..... 11K - *O.S. for Bigscreen Programs.*
AMS-126: ORRERY ..... 9K - *Watch the world go round the sun.*
AMS-127: MUSIC ..... 13K - *Easy music creator.*
AMS-128: ENVELOPE ..... 8K - *Fiddle with ENT and ENV commands.*
AMS-129: POSTER ..... 6K - *For use with Siren's Print Master.*
AMS-130: CONTOURS ..... 9K - *16 colour mathematical contour map*
AMS-131: COMPLEX ..... 9K - *Electrical engineers toolkit.*
AMS-132: DIABOLO ..... 35K - *Multi format Solataire game.*
AMS-133: ADAM ..... 6K - *Prints out A.D.A.M. text files.*
AMS-134: BANNER ..... 4K - *Print 10" high lettered banners.*
AMS-135: GLOBE II ..... 45K - *Much enhanced of the original.*
AMS-136: SYNTH2 ..... 17K - *Another Synthesiser program.*
AMS-137: QUIZ ..... 96K - *Trivia quiz + speech.*
AMS-138: SDUMP V.3 ..... 7K - *Sdump suite+ helpful front-end.*
AMS-139: STATS ..... 10K - *Statistics program.*
AMS-140: COLPRINT ..... 1K - *Prints out text in columns*
AMS-141: SPREAD ..... 45K - *A spreadsheet program*
AMS-142: DISC MENAGERIE II ... 28K - *Much enhanced version DM*
AMS-144: BIO ..... 5K - *Hi-res Biorthym generator.*
AMS-145: NUMERO .....12K - *The Cabbala made easy.*
AMS-146: 3D MAZE ..... 7K - *Can you find the exit?*
AMS-147: PHI ..... 8K - *Answers on a postcard please.*
AMS-148: S-LIGHT ..... 3K - *Sound to light generator.*
AMS-149: DOMINOES II ..... 10K - *The normal dominoes game.*
AMS-150: STRAIGHT ..... 8K - *Generates straight line graphs.*
AMS-151: REGILOAD II ..... 13K - *Regiload re-visited.*
AMS-152: HARDCAT ..... 2K - *Printed disc catalogues.(6128)*
AMS-153: PACPLANT ..... 25K - *Auntie John's version of Pacman.*
AMS-154: SDUMP V.4 ..... 29K - *Now with added AGE enhancements.*
AMS-155: BIOMORPH ..... 9K - *Tinker with genetics (6128).*
AMS-156: BANK+ ..... 5K - *Manipulates banked memory (6128).*
AMS-157: DECOMP ..... 7K - *Load compressed Art Studio files.*
AMS-158: KZMUSIC ..... 14K - *Frequency tables become redundant.*
AMS-159: WACCIWORD v2.0..... 87K - *WACCI's very own word processor.*
AMS-160: INVGEN ..... 17K - *Send other people an invoice.*
AMS-161: KEYBOARD ..... 10K - *A comprehensive sound generator.*
AMS-162: GRAFPLOT ..... 4K - *Plots graphs I think?*
AMS-163: DCHEAT ..... 1K - *A cheat loader for DRIPZONE v3*
AMS-164: SPX ..... 20K - *A Stock Market analyzer.*
AMS-165: 3DXOX ..... 7K - *3D noughts and crosses.*
AMS-166: LWA ..... 7K - *A Logic Network Analyser from AJ.*
AMS-167: PDG ..... 3K - *The Prisoner's Dilemma Game.*

AMS-168: AGE128 ..... 10K - *GEM type windows generator (6128)*
AMS-169: STROBE ..... 16K - *Flashy pattern generator.*
AMS-170: MAGIC SQUARES ..... 4K - *A bit of a puzzle.*
AMS-171: TYPING TUTOR ..... 9K - *Improov yur typping accccurarcy.*
AMS-172: FOOTBALL ..... 60K - *A pools predictor (it's a goody.)*
AMS-173: THE KIRK EDITOR .... 262K - *A very comprhensive WP.*
AMS-174: DWERRYBASE ..... 20K - *Label printer with database.*
AMS-175: DISPLAY ..... 139K - *Magic Lantern Picture show.*
AMS-176: CHESS GAMES ..... 16K - *Three chess puzzles.*
AMS-177: M-FILE ..... 41K - *Masterfile tutorial and examples.*
AMS-178: WILD ..... 15K - *An educational wildlife quiz.*
AMS-179: GENERAL.DR ..... 18K - *MicroDesign clip art files.*
AMS-180: CASS.DR ..... 4K - *MicroDesign clip art files.*
AMS-181: ORGANISER ..... 4K - *A Personal Organiser*
AMS-182: CONVERT ..... 6K - *Swap screens from 4 to mode 1 & 0.*
AMS-183: NPC ..... 36K - *Roleplayer's character generator.*
AMS-184: TANDY DUMP ..... 8K - *Tandy Printer Dump.*
AMS-185: M-FILE II ..... K - *Now included with AMS-177*
AMS-186: TIDY ..... 4K - *Clever Disc Maintainance Utility.*
AMS-187: INVADERS ..... 35K - *AJ's classic space invaders game.*
AMS-188: GRAPHO ..... 7K - *Psychadelic screen display.*
AMS-189: WACCISPELL ..... 53K - *Spell checker.*
AMS-190: FSWFORM ..... 6K - *The FSW Library order form (ASCII)*
AMS-191: XDRAW ..... 24K - *Crossword grid plotter.*
AMS-192: XWORD ..... 56K - *Crossword generator program.*
AMS-193: FRUITRUN ..... 30K - *Multi-feature fruit machine game.*
AMS-194: KEYCARD ..... 24K - *Prints 4 colour user key reminders*
AMS-195: MPCGRAPH ..... 56K - *Tandy 4 colour plotter graphs.*
AMS-196: PCBDRAFT ..... 82K - *Printed Circuit Board designer.*
AMS-197: TRANSFER ..... 3K - *Music System tape to disc utility.*
AMS-198: DISPLAY II ..... 170K - *Magic Lantern Picture show mark II*
AMS-199: NO-NO.BSX ..... 9K - *Does illegal things with upper ROM*
AMS-200: WAR ..... 13K - *Wargame Program.*
AMS-201: ASCII2 ..... 3K - *ASCII files to HOII format*
AMS-202: EXAMPLE ..... 22K - *Bellaby's Cobol example files.*
AMS-203: CGP115 ..... 8K - *Colour Dump for the Tandy CGP115*
AMS-204: CAUTO ..... 42K - *Gawd knows!*
AMS-205: PROGDOC4 ..... 28K - *Much enhanced version of AMS-14.*
AMS-206: WACCISPELL2 ..... 91K - *Much faster than the original.*
AMS-207: MORSE ..... 2K - *Morse code translator.*
AMS-208: CRAIG ..... 4K - *Children's word recognition prog.*
AMS-209: XSUM ..... 9K - *Arithmetical noughts and crosses.*
AMS-210: ESCAPE FROM WACCI ... 80K - *AJ's animated adventure program.*
AMS-211: HEXTOBAS ..... 3K - *Convert Hex files to Amsdos binary*
AMS-212: DRAUGHTS TUTOR ..... 33K - *Precisely that.*
AMS-213: MCODER ..... 144K - *M/Code tutorial with example files*
AMS-214: OSKD ..... 3K - *On Screen Key Definer.*
AMS-215: OHM ..... 3K - *Calculates Ohm's law for you.*
AMS-216: RESID ..... 3K - *Electrical RESistance IDentifier.*
AMS-217: WACCIWORD 3 ..... 108K - *Latest, speedier version.*

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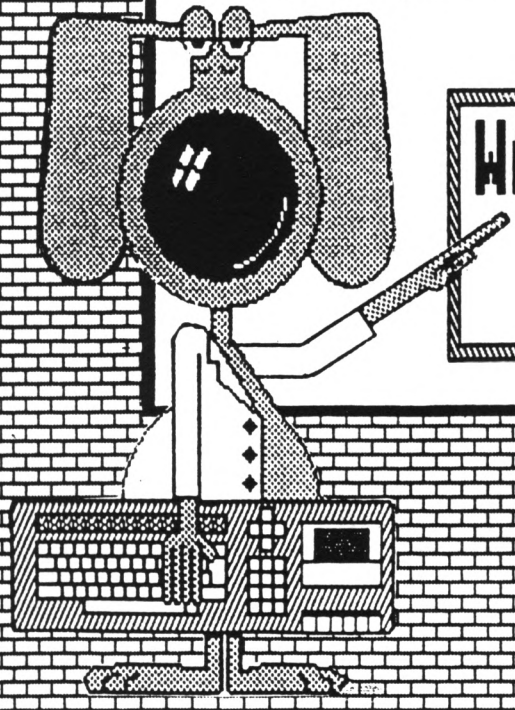

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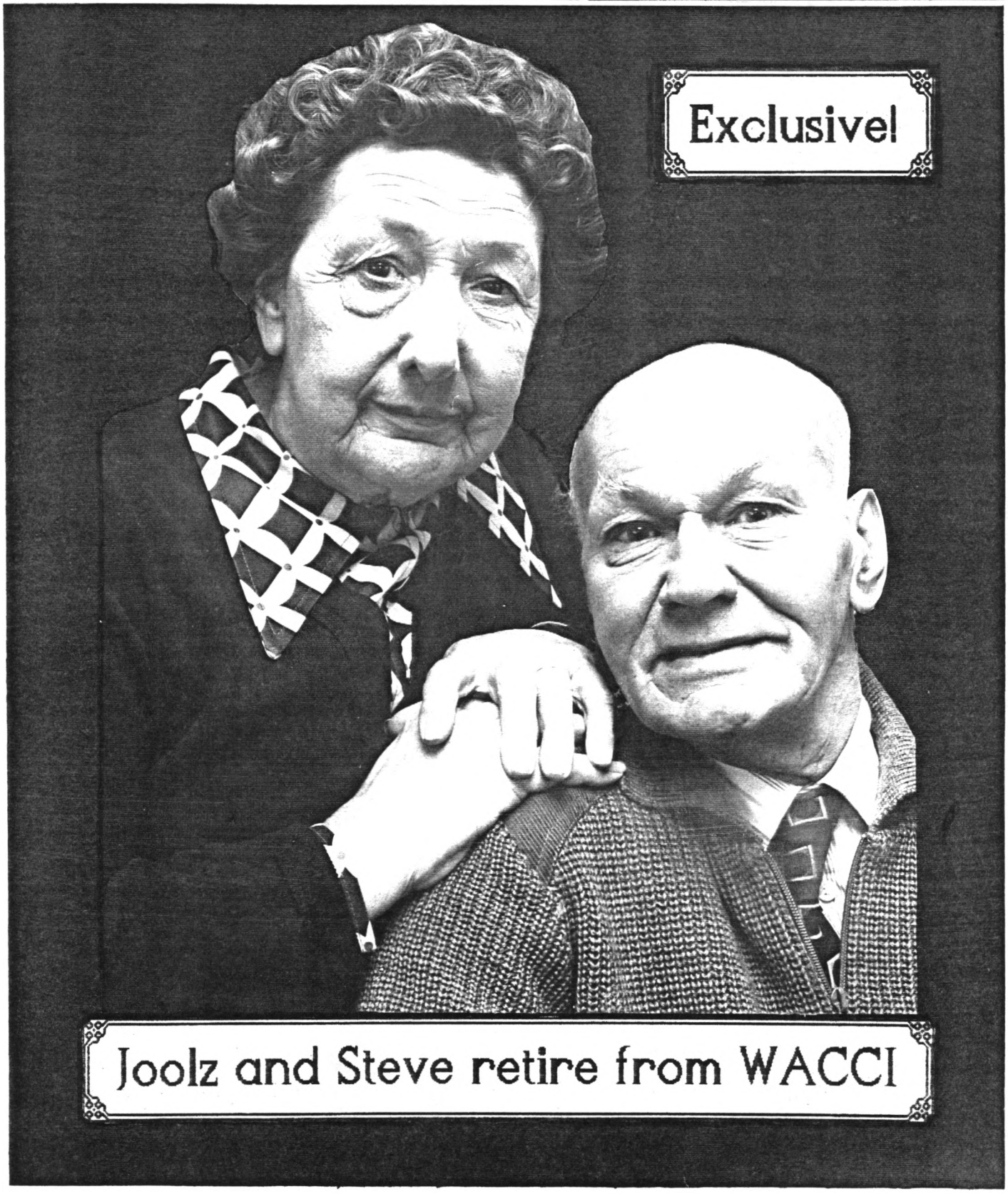
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