

The Forty-Fourth

WACCI

June 1990 Vol 5 No 6

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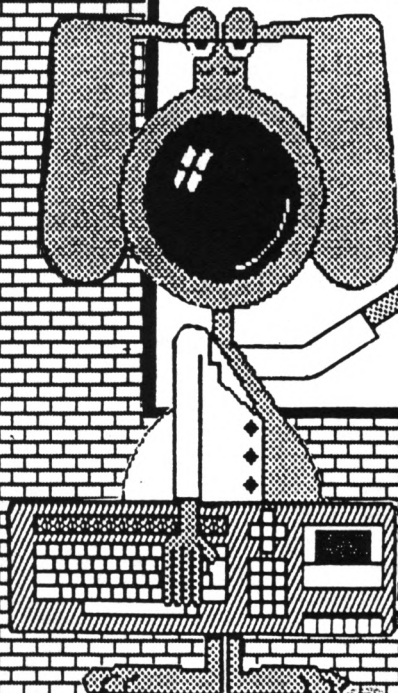
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WACCI was conceived and founded by

JEFF WALKER



INTRO

Oh the joys of frog throttling! Ever tried it? No neither have I so, let's get on with Thank'n'Stuff...

ITALIA 90

Hi Gang. Here we are, probably late again. It may well be the case that, by the time you are reading this, the World Cup has already finished. Which is just as well because apart from this paragraph, the front cover and Simspot there is absolutely nothing pertaining to the event in this issue. Well, after all, this is supposed to be a computer magazine!

IDEAS WANTED

Talking about the front cover (as we were) I must apologise for this months cover. Not a sensational effort I must admit. That's because I did it and it's the first one I've had to do for ages and I was a teensey-weensy bit bereft of ideas.

Yes it's true, ever since I appealed (back in November) for members to send in ideas for front cover pictures, I've had a steady stream of them.

Just recently though, I've run out. So if you want to have a go, dig out a ruler and measure up the size of the front cover on this issue, that's the space you have available to work with.

As a rough guide, hand-drawn pictures are a no-no, unless they are of exceptional quality. The picture shouldn't contain any of the details shown in the two upper boxes, such as month, price or issue number.

The subject matter is up to you. If possible try to tie it loosely in with something either to do with WACCI, computers or something topical.

Finally, don't use speech bubbles (that's Private Eye's trade mark not WACCI's) although banner headlines (see this month's) are OK.

Many thanx from myself go to Glenn Carey, Peter Ceresole, Robert Heaton, Paul Dwerryhouse for supplying me with some marvellous covers since November.

APRIL JOOLZ

I forgot to mention it last month but what did you think about our review of MircoSoft's Windows program, featured in the April issue? Not fussed? That's OK but I know that one WACCIite got quite excited about it. So much so that he actually got on the phone to MicroSoft to ask about the program. It wasn't until he got through to their technical department and found that they didn't know anything about a CP/M version of Windows, that he realised something was not quite right...

Pardon? What did you ask? No I'm not

going to name him, suffice to say he had a few choice names for me when he phoned up WACCI HQ.

OOPS

And talking of phoning WACCI (as we

were) you may have noticed that the dreaded WACCI answering machine has been working overtime recently.

Once again we are going through a period of being too busy to answer the phones ourselves. So if you have a

problem, please try contacting one of the people on the Help-Lines in the first instance, if at all possible.

Finally, don't get annoyed when the voice on the answering machine says "we will get back to you" and then we don't. The message is produced by a chip and I can't alter it even though we can't always get back to you.

THE WACCI TELEPHONE HELPLINE

STEWART PEPIATT (0245) 353903
(Chelmsford)
*Basic and m/code programming,
DMP2000, VDE, Scrivener.*
<<A Tech-Head -Ed.>>

PETER CAMPBELL (041) 5544735
(Glasgow)
OCF Art Studio, Vidi and Basic.
<<A Comms Guru as well -Ed.>>

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

PETER CERESOLE (081) 878 0391
(London)
*Protext, Promerge, Utopia and
nukes (amateur status only.)*
<<A total nutter to be avoided
at all costs -Ed.>>

TONY WALKER (0772) 700440
(Preston, Lancs) 10am - 10pm.
*Comms, Protext, Prospell, Tape
to disc transfer, CP/M on ROM.*
<<A MEX expert, a good chatter>>

CLIVE BELLABY (0602) 725108
(Nottingham)
*Basic, Cobol, CP/M, Dominoes
and VDE problems.*

ROBERT HEATON (??)
(Wolverhampton)
*Basic and m/code, printing and
anything else worth a good chat.*
<<Send us your number Rob -Ed.>>

NORMAN BUXTON (0260) 223257
(Macclesfield)
Basic programming and farming?
<<Control codes a speciality -Ed.>>

STEVE LEADER (0689) 73633
(Orpington) 4.30pm - 9pm.
*Adventure games, general help
and electrical projects.*

PAUL DWERRYHOUSE (0244) 534942
(Deeside, Clwyd)
*Basic, Bank Manager and a very
sympathetic ear*
<<The author of WACCIWORD and
WACCISPPELL, errmmm... -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.>>

MFU

A couple of issues ago we reviewed a wonderful little package, called CPC MFU, that allows you to read and write to nearly all the known 3.5" and 5.25" disc formats. What we didn't tell you was how much it would cost and where you could get hold of it.

This wasn't a mistake, what happened was that, at the time of the review, WACCI was negotiating with Moonstone Computing for, not only the best price but also an exclusive marketing deal.

So I can now tell you that although the PCW version of MFU costs £50, you can get the CPC version a lot cheaper from WACCI at £29.95 and you can get it only from WACCI.

OUT OF DATE?

When you read Fair Comment, this month, you may be a little puzzled by the fact that some of the letters seem to be referring to matters which happened quite a while ago. This is because they are letters which were sent in on paper (as opposed to disc) and have only recently been typed-up by our willing volunteers.

So if you see comments such as "received my January issue yesterday" or "still waiting for my March issue" don't think that you've fallen into a time-warp, they really are that old.

While we're on the subject of typing up letters onto disc... This month it's thanx to Nigel Mells for doing the latest batch.

JOOZL RULES OK

There seems to be some lessons to be learnt in all of this, namely...

1. If you want your letter to be printed fairly promptly, send it in on a 3" disc that has your name and address clearly written on the label. (Our thanx go out to all those people

who have taken my advice about this. Honestly it really does make all the difference.)

2. If you want your disc returned really quickly, send it in separately (eg. don't send it in with an order for loose PD software.)

3. Mark your envelope "FAO Fair Comment."

4. Including a sticky-backed return address label is always handy for us but a return postage stamp, although always appreciated and very kind of you, is not strictly necessary.

5. Please don't send stuff in to us on 3.5" discs. Apart from there being a plethora of different formats to wade through, 3.5" discs seem to have a better chance of corrupting than their 3" counterparts.

The best solution that I've seen used by several club members is when they put their disc into a jiffy bag addressed to themselves and then stick the jiffy bag into a normal large envelope, addressed to Fair Comment c/o WACCI.

That means that when it arrives here we instantly spot that it's a letter on disc, open it up, copy the contents onto the big disc, shove the 3" disc back into the addressed jiffy bag and put it straight back into the outgoing mail box. Simple eh?

MUSCLE POWER

Who said that computer-users are an unfit bunch of smoking, drinking, late-night code junkies?...

Arnor's Gavin Every (a certified code-freak) and Douglas Thompson, (their elderly sales manager) recently limbered up for a sponsored, six mile, charity fun-run in Peterborough.

The money raised was destined for several local disabled charities and Jimmy Saville's Children's Hospital.

Joolz and I agreed to sponsor the elder of the two contestants for £1.50 a mile each and an extra £1 each if he managed to finish the course rather than the course finishing him.

Young Gavin completed the course in a very impressive 47 minutes and good old *Duggy-Wuggy* managed to cross the line a couple of hours later with a time of 47 mins (who says that bath-chairs can't be scooped-up?)

Congratulations to both of you, a cheque for £20 is in the post.

HOLIDAYS

Ahh, the summer's here again. The sun is shining on Down Town Twickenham. Have you got your holidays planned? Yes? Where are you going to? Really? That's sounds nice. Pardon? Me? No, I can't spare the time.

No really, I'm not kidding you, as

soon as I finish one magazine I have to rush to catch up on all the other work that has to be done. As soon as that's finished it's time to start the next magazine.

Yes it is non-stop and it's been that way since I took over, back in April 1988? I haven't had a holiday in over two years. Well since you ask, yes, there are a couple of things I could do to get a break for myself.

1) I could stop the magazine for one month, say September, and credit all the members with an extra months subs so everybody still gets twelve issues for their £18. I don't like the idea of dropping another issue though.

2) I had toyed with the idea of bringing out a "bumper summer special issue" which would be twice the size of a normal issue and would combine, say, August and September. This would give me chance to take a week away from the job of running WACCI.

The trouble is that I know, even if the issue was four times the size of a normal issue, there would be complaints. I'd get the moaning brigade saying "Oh I've paid for twelve issues and I've only received eleven, I want my £1.50 back." I don't fancy having to deal with that.

So that's the two options I've been thinking about. It's only the germ of an idea at the moment but it might be a runner. What do you think? Drop me a line.

SIMSPOT

On a bit of a sad note... Ken Walker's Simspot this month, is his last. The reason for this is that young Ken is training to become a teacher and no longer has the time to write his column.

Ken was actually the nineteenth person to join WACCI way back in 1986. Of course Ken will still remain a member of WACCI. Good luck with the studies Ken.

OUTRO

That's all I've got space for this month. See you at the end of July (probably) *Tarra.*

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STEVE WILLIAMS TAKES A LOOK AT THE NEWS AND GOSSIP

A MIRACLE?

Well who said the eight-bit micro was a thing of the past. First came MGT's Sam Coupe (a much revamped and muchos upgraded Speccy) and now there is two bits (bytes?) of good news for CPC owners and also some PCW users.

GOOD NEWS 1

Amstrad will finally unveil three new CPC models by the end of June. The firm has shrewdly chosen Paris as the setting (France being the CPC's strongest market by far.)

A 'presentation' will take place at a prestigious hotel in the heart of the city on June the 27th.

It does not appear to be a formal launch as such, with product availability seemingly months away (even in France.)

The first shipments of the new machines are expected to hit the UK in September/October. As expected the new CPC line-up will consist of a console (priced at around £100) the 464 Plus and the 6128 Plus. They are being pitched as a trio that could seriously revitalise Amstrad's leisure market interests.

Software houses were shown the new console back in mid-February and support shouldn't be too hard to find as converting existing tape and disc products to cartridge is a fairly easy task to perform.

The console is going to be promoted as being superior to the existing Nintendo and Sega lines and the software could have a major price advantage, possibly coming in at as little as £15-20 per title.

The 464 Plus is likely to keep its built-in cassette deck with some

improvements to the keyboard, the number of screen colours and a cartridge port being all being added. The 6128 Plus will have similar enhancements.

GOOD NEWS 2

CPC owners! What's better than having 376K free on a three inch disc? Yes, 796K free on a three and a half inch disc would seem a good answer but how about 21 Megs on a hard disc? Impossible? It seems not.

Hard discs for the PCW (and the rest of the computing world) have been around for quite a while but CPC owners have been denied access to them until now.

A West German company called Obermeier Computing are advertising a 24MB hard disc drive for the CPC and PCW range of computers, expandable to 80MB. Prices start from £380.

More information as we find it out, meanwhile the more impatient WACCILites can write to:-

*Fritz OBERMEIER COMPUTING Ltd.
Bunder Strabe 20
D-4972 Lohne-1
West Germany*

or Telephone:- 010495732-3246 and ask for "Fred" (I kid you not!)

Siren Software are also looking at the possibility of producing a hard disc for the CPC but there are doubts as to whether the unit will ever make it onto the market.

"We have been toying with the idea of producing a hard disc for the CPC and indeed we have a prototype up and running," said Simon Cobb of Siren "but the development costs

involved with making sure that the operating system will be compatible with all of the major commercial programs would be very high. I'm not sure that there would be enough demand amongst CPC owners to recoup the development costs."

If you disagree with him and would like to see Siren Software carry on and produce a CPC hard drive... give him a call on 061 228 1831 and tell him about it.

DOCKING IN SPACE?

It seems that WACCI is not the only organisation that enjoys the annual April Fool wind-up...

Faked secret documents, leaked to the Unix electronic mail community in an elaborate hoax on April the first, described space shuttle experiments that tested the practicalities of having "marital relations" in zero gravity space.

The experiments, supposedly performed on a shuttle mission last year, concluded that it was quite possible to maintain satisfactory relationships in space "but many couples would have difficulty in getting used to the approaches we found satisfactory."

The investigators were said to have had the lower deck of the space shuttle to themselves for ten intervals of one hour each, with rests of five hours between each session.

Five years before the mission, twenty possible positions were investigated using using computer simulation as solutions to keeping married couples happy on future, planned, space flights to Mars.

The winners were, apparently,

positions three and ten (the latter *"very much more rewarding than analogous postures back on earth."*)

The information appeared on the Usenet Bulletin Board and were placed there by a member of the specialist space user group *"Si.Space"* who says he did it in order to point out the scandalous waste of US taxpayer's money.

The report - *"Experiment eight Post-flight Summary"* - appeared in time for April Fool but a NASA spokesman could neither confirm or deny it.

ROBO WARS

Taking the Luddite position that low-paid operator positions are worth protecting from computers, the Communications Workers of America (CWA) kicked off a statewide campaign to *"end the robot invasion"* in which computers replace operators.

The union has won the support of senior citizens and consumer groups for a radio advertising campaign blasting the operator computerisation and conducted informational picketing at Illinois Bell locations around the state.

Gayle Gray, president of CWA Local 4211 in Ottawa and a telephone operator with Illinois Bell, said *"People need to talk to another person when they dial '0' (the equivalent of BT's 100 service.) Sometimes they dial '0' in an emergency, because they're young, or not well-educated, or sick, or in trouble, or don't speak English well. People depend on operators; they don't deserve to have to talk to a robot that only understands 'yes' or 'no' when they need help."*

Gray added that robots *"don't pay taxes, don't shop in our communities and would have a negative impact on the Illinois economy."*

COMPUTER TRESPASS

A thirty-one year old computer operator became the first person to be convicted under a new computer trespass law when he was found

guilty in a Victorian court of accessing a computer system without lawful authority.

Alexander Belkin, of Knoxfield, was fined 750 Australian Dollars at Prahran Magistrates Court last Monday under legislation introduced in 1988 as part of the Summary Offence Act. On April the 1st 1989, Belkin was said to have copied the source code for a financial accounting system from his employers, GNA Computing, which estimated it to be worth one and a half million dollars.

GNA Computing Managing Director Armen Ebeyan said Belkin had been at a computer terminal without his authority. Belkin's defence counsel, David Bamher, said the new law should be viewed as analogous to ordinary trespass and, as such, it should be necessary to prove that Belkin acted with criminal intent.

Magistrate, Heather Spooner, said the law was applicable to regular users, such as employees and not only to offences where there was criminal intent. The legislation was introduced in response to calls to curb the damage caused by mere access or *"intellectual voyeurism"* she said.

VIRUS MAN HELD

Medical computing consultant Joseph Popp has been arrested by the FBI in Willowick, Ohio, accused of trying to extort money from PC owners in the UK by circulating the virus-ridden AIDS information disc.

Worried users were told to send 325 dollars to The Cyborg Corporation in Panama if they wanted the remedy to rid their machines of the virus.

Popp has told an American court that his company, Cyborg, was set up under false names by officials of the World Health Organisation - an allegation that has been strongly denied by WHO.

Popp is alleged to have sent the infected discs to more than 20,000 people and is to face charges of attempted blackmail and demanding money by menaces.

MOUSE EATS KETCHUP

Messy eaters who have lunch at their computer desks could be interested in the latest mouse from Honeywell which never needs cleaning. The company claims it can plough through layers of ketchup, mayonnaise and olive oil and still work.

Its design incorporates two angular, aligned feet which control cursor movement in either an X or Y axis and cut out the need for mouse pads or special surfaces. No price has yet been fixed.

HACKER JAILED

A teenage computer hacker who gained unauthorised access to several online computer systems and destroyed several dozen files, has been jailed for a year, eight months of which are suspended dependent on good behaviour whilst in jail and for an unspecified period after he is released after four months.

Richard Whiteley, now aged 21, and a part-time computer consultant with the London Opera Company, called himself *"the mad hacker"* and - by his own admission - waged war on computer systems for a period of six months during 1988 from his bedroom's computer.

Whiteley, of North London, was found guilty on four counts of criminal damage two weeks ago. He is the first hacker with the dubious honour of having been jailed in connection with his activities.

During the three week-long trial, Whiteley was found guilty of adding and deleting information files on university computers in Bath, Hull and London. Senior officials with the institution told Southwark Crown Court that his hacking had cost them an estimated £25,000.

Jailing him for a year, Judge Rivelen, QC, said that Whiteley *"gained considerable pleasure at the time, both in participation and carry out these matters and it led to much boasting,"* adding *"You were then in the process of starting your own computer magazine and I have no doubt that you thought this would help and promote your magazine."*

FAIR COMMENT

FAIR COMMENT
9 SOUTH CLOSE, TWICKENHAM
MIDDLESEX TW2 5JE

PLAYING THE GAME

Dear Joolz, firstly, thank you for the last year of good reading - well worth the subscription - enclosed is the (increased) fee for another year's worth. Secondly, you want to include PCWs in WACCI... hokey-cokey by me.

Lastly, would you be interested in an article(s) describing the un-holy act of programming a commercial game, or parts thereof? I realise that a lot of my fellow(ess) WACCIites are not very interested in games but a lot of the principles involved are equally relevant to other areas of programming (Z80.) I still have to clear any possible articles with my employer (Optimus software) and with the eventual publisher of the game (our usual publisher is Code Masters) which I've been programming for the last four months and should finish within another two months.

Of course, in the true spirit of WACCI any article(s) would be supplied free, gratis and totally bereft of a price tag (except, perhaps, for a freebie photo of your own good self and the cats (oh alright then, include Him as well.)

Once again thank you for a good quality read. Yours ever sincerely...

Mike Muskett
Cleveland

PS. *Perhaps you could find a use for the enclosed printer cable? It's standard Centronics and the printer end connects OK to a Star printer. Maybe either you or one of your discerning readers can use it (the suppliers of my Star printer was a little too generous - bless their cotton socks.)*

<<Oh wow! I mean; a photo. And I haven't even had time to get my hair done. Would a picture of the cats do? OK, I'll send you some pics of our motley crew of moggies.

Of course we'd love an article (or

more) on how you go about coding a commercial game.

In our last survey, WACCIites said they didn't want games reviews in the magazine but I suspect that they feel they can get all they want about games elsewhere and they'd rather get something else here. But coding a game is quite different and should be fascinating in its own right.

If you can fix it with your employer, do send it along. As for the lead, many thanks; we'll try to find it a good home for it -Joolz.>>

ITMA RETURNS

Dear Joolz, unlike Andrew Norris I know that you are much sweeter than the DEAR used by members implies. This is yet another of my quick letters, which of course goes on for ages. Let me start with a note to Phil Morely:-

If the local college only pays £10.50 per hour then move north into Notts where they pay £18.44. Whilst on the subject of Phil have you noticed that he and Margaret Hilda Thatch, have the same initials, PH?

Now I was very confused by April's WACCI, it arrived in April. Can you please stop this practice forthwith? I must say that it's nice to see so many new names appearing in the Fair Comments section.

Now I know that we all enjoy a moan but let's keep it to sensible proportions. Phil Craven and others do their level best to meet the needs of customers at a reasonable cost, why do we all expect to buy a Rolls Royce for the price of a Mini?

Now I like Willie Lawrie's ideas for promoting WACCI. If we cannot get into the local libraries then how about the college libraries, they're always looking for good material and might even pay for issues? Willie's draughts tutor program is very interesting; there's a lot more to this game than meets the eye.

Andrew Norris asked about producing standalone files using Cobol; now if he looks at what I wrote he will find that I said that one of the drawbacks of Cobol is that it cannot produce standalone files. Sorry, as far as I am aware it cannot be done.

On a similar point Andrew mentions the EXEC programs used by Cobol and Pascal and gives the impression that both these languages use the same EXEC program; again this is not the case. Although both these languages contain a program called EXEC.COM they are different programs that happens to share the same name.

Robert Heaton is looking for ideas about which programs to write. Okay then, how about a short program which prints out ten pound notes which I can use to pay my poll tax bill. Hi there Robert did you enjoy the holiday and where's my post card.

Now I wrote earlier that we should not spend our time complaining but since my name has been on the helpline I have had lots of interesting and varied problems but they have all been from MEN. Are Steve and Peter keeping all the females away from me? If they are can you please put a stop to it.

Congratulations to AJ on moving to England and obtaining the job, it is a shame about the beard spoiling his good looks.

My thanx go to Paul Dwerryhouse for his review of the CP/M windows program however I understand from Microsoft that ACU have purchased the whole of the first production run.

1992 and the European single market are fast approaching so I have decided to get ahead of the others by driving on the right hand side of the road and changing my address.

Clive Bellaby
Somewhere in Europe

<<Yes Clive, I understand that if you do the one you'd better do the other. Err... Crash. Lets take this bit by

bit; yes, April's issue was out just in time to fit in with the Trade Descriptions Act but I wouldn't feel too threatened- it's not going to be a regular occurrence.

As to buying a Roller from Phil Craven, I don't remember ever trying that... But I do know what you mean. As you know, we publish the letters that we receive and we have had some letters of support too.

Do you think that college libraries would be interested in something as specialised (by definition) as WACCI? Does anybody have any more thoughts on outlets for the magazine?

Oh and yes, the ten pound note printing program has already been submitted by our member from Chicago, Albert Capone...

There are the usual problems about converting the printer from dollar signs to pounds and a few copyright bits and pieces to clear up but we're hoping to get it into the FSW library within ten months or so. Finally *ONG* and Peter say that chance would be a fine thing... What do you suppose they could possibly mean? -Joolz.>>

AN HONEST CHAP

Dear Joolz, thank you for sending the CP/M disc 2. Another copy has just arrived, which I am sending back to you. See how honest and reliable we all are.

The date at the top of this letter was originally 16th March but due to unforeseen circumstances (the disc with my name and address on, specially for posting to WACCI didn't come back) I am actually writing it in mid-May. I am glad that the disc came back eventually, even though it ended up being a different disc with a 3.5 inch disc label on (I hadn't realised they were the same size.) At least I am back in communication with WACCI HQ. (Oh no you groan!)

I see Steve has another new potplant next to his. Well it was new in November anyway. Does AJ provide them? I hope Steve is watering them properly - the one on the left doesn't look quite as healthy as the others.

Thank you for putting my name

straight on the address label.

Regarding my problem with CP/M+ and Newsweep, it was a case of my not reading my manual - only it was the manual for the Dk'tronics RAM expansion that I hadn't read which wasn't the obvious one to look at. All problems solved now thanks to their patch. It was something to do with the keyboard scan of the 6128 - if anyone can explain the difference I'd be interested, as it is one incompatibility problem I have not come across before. <<Anyone? -Joolz.>>

I can understand to some extent the problems arising in producing the magazine, as explained in Peter Casserole's article (way back in February - see how out of date all this is) as three times a year I had the interesting but hectic task of compiling our church newsletter. This was done on the same word processor I am using to send you this letter. You asked what it was that had produced the peculiar file on the last disc. It was my own version of Text Editor - a type-in that appeared in Computing with the Amstrad in February 1985, although almost everything has been completely re-written by me, as it can now do italics and other wonderful things, as well as this nifty micro-justification you can see, not that you will see it in Fair Comment.

You might be interested (but I doubt it) that the assembler I use for all my machine code is none other than RAW - a type-in from CWTA July 1985 - all in BASIC. It encourages me to get my code right first time, as machine code of the length I am into can take over five minutes to assemble!

A friend of mine, a BBC B owner (I believe he actually uses the thing as well) occasionally reads bits of WACCI. The bits he likes best are the Life cartoon and Phil Morely's letters (and more importantly, the replies.) He didn't like the idea of using a laser printer to do the magazine either, though I'm not sure how to value the opinion of someone whose machine has only 32K RAM.

Have you ever tried using the BBC's PLOT command? It is totally incomprehensible and as for the 6502

CPU with three 8-bit registers?...

Anyway, enough of slagging off inferior machines - he gets his own back when he transfers his BBC programs to an Archimedes where they run incredibly fast - so fast that you have to put delay loops in BASIC games. Acorn's RISC chip is certainly no WIMP!

Thanks to Andy Frame I am now the possessor of a Ram Music Machine. Now I am saving up to buy a lead to connect it in parallel with the disc drive interface. Why didn't they put a through connector on? Amstrad itself doesn't set a very good example though - the disc drive interface isn't equipped with one either! However it is probably Locomotive Software who have caused an interesting 'feature' of the 6128 ROM. If you are lucky enough to have a 6128 (complete with its disgusting keyboard) you might have noticed when switching on a slight flicker when it prints up the copyright message.

If you also possess a Multiface II or similar device, you can try stopping it during the print up. As far as I can tell, it prints up the word "Copyright" and then writes over it with the copyright symbol followed by "Amstrad Confuser Electronics" etc. Why it does this I have no idea but it certainly looks silly.

Does anyone have a dozen of the new style Amstrad disc sleeves spare - you know the kind - the ones that aren't hinged and don't break when you drop them on the floor. Judging from the hype in the never-changing WACCI Adverts Section, I must be in the minority that prefers the new floppy plastic cases to the old hard ones. I have about five of the latter which I would gladly give to WACCI if I could get hold of some of the new kind. Well, you must admit they're better than the Maxell ones, surely? You can't even see the edge of the disc label and half of mine are coming apart through over-use.

That just about rounds off a three-month late letter (it wouldn't have been so long if the FSW had come back sooner.) Sorry, I'm not really complaining - you must have your work

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cut out reading rubbish like this, let alone putting together a high-quality magazine and doing all the orders. The next letter will be shorter to reduce the workload (I'll try, I promise.)

Matthew Phillips
Beeston

<<Yes Matthew, what's happened is the explosion of the club membership numbers. The Schloss is fairly swimming in discs now. *ONG* keeps track of who sent discs in but sometimes the one that comes back isn't the very same one you send out. Still, we only use the very best butter- I mean discs, so it should all work out for you. Thanks for the programs, you'll be seeing them in the library soon.

I'm glad you've noticed the potplant population explosion too. But the one on the left predates AJ, it is the original Founding Father Potplant that belonged to Jeff Walker in the Earliest Days, so now it is actually fossilised. So you see, watering wouldn't make much difference.

I'm told the 6502 has its devotees as a pioneer RISC processor. Don't they use it in washing machines too?

As for the 6128 ROM it sounds as though they changed something at the last minute and couldn't be bothered to start again from scratch.

By the way Old Peter Creosote has been reading this stuff over my shoulder and says (very sniffilley) that the CPC6128 keyboard is one of the best around for those that can appreciate true quality.

He does say things like that but the cats tolerate him because he's quite useful otherwise...

Rowland A Waddilove's *RAW* program is slow... but at least it's solid (and of course it's, totally free!)

We like the floppy plastic cases here too and we have a few spares... I'll nudge *ONG* (in his appropriate soft sectors with my totally rigid shatter-proof, clear plastic ruler)

and ask him to include a few with the two discs you have sent us in the "not-so-distant" recent past.

Of course at WACCI Towers all our discs are solid platinum limited edition to go with my silver sarong, my assistant Sireena's gold lame catsuit and the (*real imitation*) Ivory keyboard imported directly from Africa. Carry-on swishing-on -Joolz.>>

A LONG WAY AWAY

Dear Joolz. Being pretty well a new comer to your ranks I'll start with a big HELLO to all the editorial staff and, if you happen to publish this, to all the WACCI readers.

Actually I could have been a subscriber from quite some time ago but when I enquired what method of payment was acceptable and how much additional was wanted to cover airmail from you in the antipodes to us in New Zealand, the reply was a deafening silence. However I did eventually decide to purchase a sterling cheque from the bank and risk sending that to you for a magazine subscription and a few other items. Mind you I had in the meantime made enquiries amongst my Amstrad Computer Club members, one of whom assured me that you did really exist but only reacted to cheques and not to credit cards.

I would plead though that you make it clear in your adverts and order forms exactly what methods of payment are acceptable and what costs (if any) are involved for postage and packing to various destinations.

Over (down?) here we do realise that airmail postage costs can be high and want to be sure we're sending the right money. The whole procedure is quite simple when you can use VISA or MASTERCARD but sterling cheques must be purchased for a specified amount from a bank, who of course don't do this for nothing but also seem to always need to take at least 24 hours to write the cheque out.

Anyway it is not very economic if one wants to only send a small amount, so you can see its vital to get it right first time. I might also at this moment make the point that airmail

just has to be used since surface mail from UK to here can often take up to four months - one of the advantages of containerisation!!

Touching on a recent comment in WACCI, the label *FANZINE* seems a most ridiculous word to me. If, for some peculiar reason, the title "magazine" cannot be used in public could I suggest using the title "JOURNAL." This in any case is the usual title for the magazines issued by learned societies and institutes - so what could be more apt.

As I haven't been able to find the answer in the three issues of WACCI so far received I do have a question. I am intrigued by the offer in the order form for Picture Discs - what are they - could I use them - why should I want them ??? I'd love to know.

Lastly. You will also find on this disc a BASIC program called 'AFRICA'. I originally found this in a French magazine *"Les Cahiers d'Amstrad"* June/July 1986. I have spent a long time in translating, correcting, modifying and augmenting the original but obviously the credit for main structure of the program belongs to the original author. I am not versed in matters of copyright but if you believe it is OK and the program is of interest - here it is!

I would appreciate the return of this disc (or a replacement) at the time you dispatch my order on the enclosed order sheet. Cheerio for now

Keith Surridge
Wainuiomata
New Zealand

PS. *My French is almost nil, so the above effort was done largely as a self-imposed challenge.*

<<It's wonderful to hear from you, Keith. It's a long way from sunny Twickenham, Wainuiomata sounds very romantic; is it?

We call ourselves a magazine but the big monthlies insist on labelling us as a Fanzine. They must be afraid of the competition. Anyway WACCI is a black and white magazine.

Sorry but you're quite right, we can't afford to react to credit cards.

In fact it should be easier for you to get an international money order than the process you describe to get a sterling cheque out of the Kiwi banking system. As for the mail system, the magazine price does sterling cheque out of the Kiwi banking system. As for the mail system, the magazine price does and that's even more true of boxed programs or hardware items. Sorry but it really is a long way...

The picture discs are just what they say, squeezed picture files that you can unsqueeze using Newsweep and then use as clip art- or any way you like. They're in standard CPC format and if you load them to &C000 or into Art Studio you'll see them in all their beauty. Just as important is that you can get very high quality dumps using SDump4 (AMS-154) and an Epson compatible printer. As to whether you'll like them, it depends on whether you like that kind of thing.

Next, Africa. Yes, very pretty and very educational but also very copyrighted- and there's the problem. You see Keith, this comes up all the time because although most of the CP/M programs in the library are in the Public Domain, most of the AMSdos programs are not but remain the copyright of the members of WACCI.

We have perpetual battles to remind people that you have to get them from WACCI and that it's not on to copy them and redistribute them from another library. *ONG* gnashes away like a lion defending his cubs (do lions do that?) and we'd be just as protective about any program that you sent in. So we have to respect the original author's copyright on "Africa." Having said that, it looks like your translation is spot on.

Your disc will come back with your order, 'though it may not be the very same disc <<Oh Yes, it WILL be -Ed.>> (see the answer to Matthew's letter above.) I hope you enjoy WACCI and write to us again. -Joolz.>>

TO ADVERTISE IN WACCI
RING (081) 898 1090

A CODE OF CONDUCT

Dear All at WACCI, well, this is my second letter to you but on disc this time and, I hope, in the Protex 38 column format you prefer.

I am one of your "old codger" members who, after retiring as a lecturer, now runs a correspondence course for CPC Beginners Basic. This is not to make a large profit but to keep up my interest in computers and to keep the old grey matter occupied.

Remember the Harwell 20,000 valve monstrosity back in the 1960's that I mentioned? That was really programming under duress.

It was fortunate there wasn't hammer to hand that I had the bottle to use. The following is in reponse to your comment in issue 43, regarding members writing in tips etc., even if they think their efforts will end up in your rubbish bin. Which this probably will. <<Nick, as if I would ever do such a thing? -Joolz.>>

It is really to add to Norman Buxton's series about control codes. There are two in particular that can come in very useful, particularly when printing columns of characters, ie where one or more chars have to be printed under others.

PRINT CHR\$(8) is a backspace. In other words, when the computer reads this statement, it moves the starting position of any further printing back one space along the line.

PRINT CHR\$(10) is a line feed. That is, it moves the start of subsequent printing down one line but stays in the same column. You can use as many CHR\$(8)s and CHR\$(10)s as you wish to suit the needs of your program.

You are probably thinking, "What advantage is this?" Well, it allows you to program so that two or more characters can be held in a string and placed on screen and printed with a single LOCATE statement, resulting in some of the characters being printed below the other characters in the string. Clever stuff, eh?. Certainly saves a load of different LOCATEs!

To start off with a simple example, I use these codes to print the letters 'A' and 'B', so that 'B' is immediately beneath 'A'.

```
10 CLS: A$ = "A" + CHR$(8) +
    CHR$(10) + "B"
20 PRINT A$
30 GOTO 30
```

Line 30 is only used to prevent the 'Ready' sign and cursor appearing. Press the ESC key twice to break into the program.

A similar command is used in Lines 270/280 of the TELLY TENNIS program in the manual.

OK, so you hate games. Then why have you got your fingers crossed when you say that?

The following program uses simple Basic animation methods to move a block of four characters (two on top and two underneath) around the screen using the arrow keys.

CPC graphics characters CHR\$(200) and CHR\$(201), have been used to produce a diamond with border but you could use any characters you wish.

```
1 REM - USE OF CHR$(8) AND CHR$(10)
10 MODE 1: x=19: y=10: xx=x: yy=y:
    s=1000 'set up variables
20 a$=CHR$(200)+CHR$(201) 'create
    string variable of top two chars
30 b$=CHR$(201)+CHR$(200) 'create
    string variable of bottom two
    chars
40 ch$a$+CHR$(8)+CHR$(8)+ CHR$(10)
    +b$ 'combine both under one
    string label separated by two
    backspaces and line feed.
```

Note:-

The two CHR\$(8)s are required for we are printing two characters and will require two backspaces to go back to the start of the line.

This means that CHR\$(201) and CHR\$(200) will be printed beneath CHR\$(200) and CHR\$(201) at whatever position is determined by LOCATE x,y.

```
50 era$=" "+CHR$(8)+CHR$(8)+CHR$(10)+
    " " 'create a similar string
    with double blank spaces to
    erase top and bottom characters
    before the new block is printed
```

```

the blanks will be controlled by
the variables 'oldx' and 'oldy'
60 oldx=x:oldy=y 'create variables
for old position of block
70 IF INKEY(8)=0 THEN x=x-2:GOSUB s
s 'check INKEY for arrow keys
and send to subroutine at 's'
(Line 2000)
80 IF INKEY(1)=0 THEN x=x+2:GOSUB s
90 IF INKEY(0)=0 THEN y=y-1:GOSUB s
100 IF INKEY(2)=0 THEN y=y+1:
GOSUB s

```

Note:-
When using INKEY (instead of INKEY\$) the value of any key not pressed is -1. If a key is pressed on its own, then the value of INKEY changes to zero (0). This fact is used by employing IF INKEY(N)=0 to check for any arrow key being pressed.

The KEY NUMBERS are printed over the disc drive on the 6128 and in the manual for the 464. INKEY also has a faster response than INKEY\$. Again, the dollar sign at the end of INKEY\$ indicates that it handles strings. INKEY, not having a dollar sign, deals with numeric values only.

```

110 IF x<1 THEN x=1 'ensure block of
characters stays within the
screen limits.
120 IF x>38 THEN x=38
130 IF y<1 THEN y=1
140 IF y>24 THEN y=24
150 LOCATE x,y: PRINT ch$ 'print
block of characters.
160 GOTO 60 'return to wait for next
arrow key to be pressed.
1000 LOCATE oldx,oldy: PRINT era$:
RETURN 'subroutine to erase
old character block when an
arrow key is pressed.

```

As you will appreciate, the use of these two control codes can produce required results with the minimum of commands.
I hope the information is of use to some readers and I'm sure that those with a little Basic knowledge can think up other applications for these two control characters.

I agree with Norm about the problems that could occur when using some of the other control codes.

If anyone is interested, due to changing programs I have the following 2 recent originals, both with manuals and boxed, at half price, including post/pack in UK:-

PROTEXT version 1.10 on disc..... £10
MINI OFFICE II on disc..... £8

Please phone 0246 - 811519 anytime.
First come-first served.

Anyone requiring full details of the Amstrad Basic Beginners Course should NOT phone but send a 9"x4" SAE to:-

A.B.C.,
68 NORTHFIELDS,
CLOWNE,
CHESTERFIELD S43 4BA

I know the manual is not of much help but not too many - please.

How's that for a free advert?
"Mick" Baker

<<Pretty blatant I'd say, Mick but I blinked as it went through. Maybe *ONG* could take the course... OW! Do you know, he sneaks up and reads over my shoulder. I'll have to get busy with the shatter-proof plastic ruler again. Thanks for the tips -Joolz.>>

ENGAGE THE CAGE

Dear Joolz, I thought it was about time I bought some WACCI software so here is my order for three of your Homegrown discs. You can stop sending those begging letters now, Steve.

AJ makes a lot of very valid points in Feb's Fair Comment, although I think it is perhaps going a little too far to suggest that WACCI cater for as many machines as possible. That would almost certainly have a detrimental effect on the magazine. Which machines would he include and which would he exclude? I can accept the PCW; as AJ says, it is very similar internally to the CPC but should we allow the Spectrum into the fold now? It is an Amstrad after all's said and done.

Consider the Amster's Cage magazine

on Micronet. It has always operated an "open house" policy but within a strict environment. The editor also runs the PC Base area, owns several different machines and doesn't use a CPC to update the Cage. Regular contributors to the daily letters section also own "other" machines and a lot of the letters tend to be non-specific but this doesn't seem to make any difference and probably adds to its popularity. However, when specific questions do arise they are normally CPC/PCW related, any other queries normally being referred to their own specific areas where they would more likely get a better answer to their problem.

Whether this approach would work for WACCI I'm not sure. I doubt it because, by it's very nature, it can never be as dynamic as an electronic magazine. Including the PCW can't do the magazine any harm and I won't be complaining as long as it doesn't significantly reduce the CPC content.

The Amiga typesetting looks very good and certainly gives the articles that professional finish but shouldn't an Amstrad fanzine be produced on an Amstrad? By using bigger machines you're giving way to its limitations and I'm afraid that might mean you are moving away from the one principle of a dedicated computer fanzine. My concern is that the magazine might suffer from too much professionalism and therefore lose its "amateur enthusiast" appeal.

Steve Provost
Burnley
Lancs

<<Thanks for your order and your views, Steve. In fact the real similarity between the CPC and the PCW is CP/M; it's a powerful similarity and as we've been doing more CP/M pieces recently we're already in a common area. *ONG's* just decided to formalise the relationship.

The advantage, we all hope, is that Joyce owners will be more aware of us and join. I'm looking forward to getting new PCW owning members joining the family. And if any Spectrum 3 owners are running CP/M and read

WACCI... Well don't be shy, write and tell us. In the mean time, see the article on "Rescue" in this issue. Real CPC/PCW fusion -Joolz.>>

TALES OF HORROR

Dear Joolz, I observed with horror the front page picture on WACCI 303, which announced the imminent retirement of Joolz and Steve. You really shouldn't do such things on us, I almost had a heart attack. What a relief to discover that it was dated Feb. 2012. With considerable dexterity, I stood on my head and observed the back page, which turned out to be the front page and noted that it also had been stolen from Dr. Who's time machine but in the other direction.

Where did you get the old picture of Neville and his silly bit of paper, which turned out to be worth nothing. Really, you ought not to have inscribed WACCI upon it, our magazine is a great deal more important than that old useless scrap of paper.

Thank you for the nice comments on my Protext Starter files. I see that I have been honoured with the inclusion of my ancient BIGLABEL prog in the May issue. Ancient, because it has been superseded by a Protext file which does the same thing, even more easily. I suppose that it was just the right length to fill up a space in Alan's article, on *Very Basic Basic*. I note that it is not so very long ago since I would have been glad of such articles to get me started.

You will see that I have abandoned the Tab in favour of two spaces to start a new paragraph. I trust that we have now got the format right at last.

I had a pleasant surprise a few days ago. A phone call from a long lost cousin, whose husband turned out to have a 6128. Poor Joan, she has only just rediscovered her cousin, only to lose him again to her husband and the awful computer thingy. Bill and I had a great time, playing with his home grown business stock and job pricing system. Unfortunately, his disc drive has gone defunct and I was horrified to learn that repairs are almost impossible, owing to the surface

mounting components used. A local shop quoted £90.00 to replace the drive. This is the price we pay for miniaturisation.

So how did we manage to run his programs? I brought my 6128 to test it against his and determine if all that cash was going to have to be spent. I also brought my trusty Citizen 120-D, as Bill had not yet got a printer and for openers, I gave him a printout of his program, about seven pages of it.

After a few mods to his data handling routine, we printed out a full list of all the components he uses in his house wiring business. This delighted him and now he has the problem of where to find the cash for a new disc drive and a printer. Then he will start modifying his program (at present it uses over 6000 lines) to do formal quotations and all that. It's never ending, this programming but great fun and useful to Bill as well. I left him a few old WACCIs and you will likely get a sub from him.

I wonder if there are many more 6128 owners in or around Lisburn? Perhaps they might like to drop me a line or phone, since my address and telephone number has slipped into WACCI via the prog which you have published. By the way, I have abandoned the idea of wrapping my discs in aluminium foil, since everybody who should know, says that it does no good anyway. The last discs which I recieved from you, were fine, loading and running without problems.

Is there such a thing available as a standard disc with which to set up the adjustment of our disc drives? Is it considered to be worth trying to do this? My local dealer said that it was a very hit and miss affair and could well take all of his day and therefore all of my money. I would not hesitate to try it myself if I had a standard disc with which to do it. I have often done this job on audio machines which have proper adjustment facilities provided. Can anybody advise on this?

I am sure that I can speak for most WACCI members, when I say that we are all sorry to hear of John Hilton's illness. It is a tragedy indeed that one who has been engaged in helping

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others, now finds himself in need of help. Perhaps I could assist in this matter of reading text onto tape. Let me know if I can help. There might be others in a similar plight, who would benefit from such a service. In the mean while, I shall remember him in my prayers. That seems to be all for now so God bless.

AL "The L Plate" Cooper
Lisburn

<<Hello Al, I'm glad you can still stand on your head like Old Father William. *ONG* has a soft spot for Nevil but personally I like that scene because he had just stepped out of a very elegant old aeroplane. You can't see it on our cover but you can see his particularly hoopy mustache. Mmm. As to aligning the head in your drive, does anybody have the technique nailed down? Anybody?

Thanks for your offer to read some of the magazine for John- others have written in and we'll try and organise things properly -Joolz.>>

KNOCKOUT STUFF!

Dearest Joolz and indeed you are a dear, you MUST be to put up with all us lot and him as well. Note I used caps (sorry, UPPER CASE) instead of underlining to avoid using control chrs in the letter when re-formatted to the favoured 38 col.

March WACCI was full of interesting stuff so this will be a fairly lengthy letter. Thank his nibs for sending me blank discs after previous order got lost in post. I'm a bit naffed off about losing my original disc though especially as it had a decent case - but you say don't send 'em in cases so I won't.

First for K M O'Neill. Well I thought about it and despite having a million other things to get on with said oh what the hell and herewith enclosed on disc is KNOCKOUT.

It is a program that will help organise any knockout tournament - tested on a family dice-rolling match - the aggro that caused. It may not be exactly what KM wants should he really be after running a round-robin type tournament but hopefully it help a lot of folk. For interest's sake I've left the original line numbering &c.

Budding programmers might be interested in how I did it.

Well I spent about three hours thinking - working out in my head what the program should do, how it should be presented on screen &c. Then, well away from the computer, (actually at my mother-in-law's on Good Friday) I spent another three hours writing the program out on paper - using several sheets of A4 paper.

Another three hours were spent typing the program in and checking the syntax of certain commands with the manual. Finally three hours were spent going through all aspects of the program to make it do all the things it should do and de-bugging it. It could be tweaked up a little bit and it isn't the neatest bit of programming but it works pretty well.

Now if James Ellison thinks I can polish off an article on Supercalc so quickly - !!! What does he want- an article on what a spreadsheet is and what it does, or one that assumes you already know that but want to know how Supercalc does the business - probably both I suppose. There is in fact an excellent little book on SUPERCALC2 in the Pitmans Business Series, a little paperback which I borrowed from the library and found extremely helpful. I suggest he locates a copy.

Now for Derek Adams- Abergavenny eh? - lovely little place it is - visited it last year, excellent free car-park and a charming little cafe called The Hen and Chickens or something. Anyway Little Computer Person is controlled by various keys provided you press the CONTROL key at the same time. I forget which do what but suggest he experiments.

Some news for Philip Jimenez. Computers are wonderful when it comes to producing mags but unless you're into Laser printing a la specimens

pages t'other issue you might as well forget about DTP.

If the printing is to be done by traditional methods, it is the nature of the camera-ready copy that is important. Get your text via your word-processor using the best quality on your printer. Computer artwork is OK but hand-drawn art from a good artist is far more original and interesting. Cutting and pasting is easier on paper than on a screen!

Fancy effects from a DTP package may be alright for posters and flyers but a magazine has to be readable and changes of typeface are not liked by readers. The quality of your printer is the critical thing when it comes to magazines.

Which leads nicely to another point. The PCW is the machine favoured most by producers of small-press literary magazines. My own readers tend to assume that it is a PCW which I own and are mostly surprised when they learn I have a 6128.

Whether WACCI should serve PCWs or not I don't know. I came to WACCI when Chris Bryant stopped his CPC Newsletter. At the time, if I recall correctly, he was also doing a PCW Newsletter which had more subscribers and he decided to concentrate on the latter. Now if PCW owners already have strong helpful mags similar to WACCI then it won't help WACCI to try to move in on the market as that could be seen as pushing out us CPC aficionados. Now if all the PCW mags are going the way of ACU &c then they should be welcomed to WACCI. I'll try and suss out the situation when I meet PCW users at the forthcoming Small Press Convention.

Further on the same topic. If I were to upgrade then it would not be to a PCW but to a PC. I'm sure that applies to a lot of people as recent FAIR COMMENT has shown. I'm very tempted by some of the PD software advertised for PCs in US magazines for writers. What holds me back (apart from not being able to afford the money) is the thought of all the material I have on disc. When it becomes possible (and words in WACCI suggest it will be soon) to transfer ASCII files from a

CPC to a PC then I shall begin to consider it seriously.

This letter is far too long already and anyway the snooker's on the telly again so bye for now.

Gerald England
Hyde

<<What was it the actress said to Hurricane Higinns? I'm sure I can't remember. Anyway, Gerald, now WACCI is selling MFU for £29.95 you should be able to transfer any ASCII files you like to a PC, if you have a 3.5" drive. But you're right about the cost. Here at the Schloss *ONG* and Peter C have been droning on about how good Pro... *Schhh!* is- and that you'd have to pay for an AT to get the same speed. Remember, they lay out WACCI's columns using it on the CPC. But I don't think we're talking about upgrading to the PCW but more of common interest.

The upgrade path leads as you say to the PC or, if you really are deep into publishing and graphics, the Mac. You know what they say about using a Mac; you can get all the same sensations by looking through a pinhole and tearing up £50 notes. Of course I do that every day at WACCI -Joolz.>>

A CONVENIENT MEMORY

Dear Joolz, just thought that I would drop you a line with the enclosed FSW order and my subscription renewal. I'm only a newcomer to WACCI, my fifth issue (May) arrived the other day (does that make me only five months old?) but I've enjoyed the Mag enormously. Right, creeping over with, onto the serious stuff.

I ordered a back issue of the December WACCI some time ago (February - I think) and it still hasn't arrived. You haven't forgotten about it have you?

Has anybody out there had any success in persuading their Dk'tronics 'Silly Disc' into believing that it can also be a 256k memory expansion? There was an article in (dare I mention the name?) Amstrad Action some time ago that showed how such a clever feat could be achieved. I was just

wondering if anyone had managed it successfully.

Also I may not be trying hard enough but my Silly disc won't play with CP/M+, as suggested in the Datel advert. Mind you, it doesn't half speed up the Infocom adventures - even if I have to run them under CP/M2.2. Any suggestions would be gratefully appreciated.

Before I go, did you know that you can import Stop Press cutouts from a PCW (provided that the disc is formatted on a CPC) but not the fonts. The fonts won't work I presume because of the different way that the screen is handled on the PCW. Right, that's it for now. Look forward to the next issue and the FSW.

Tony Moran
Anglesey

<<No need to creep Tony but please don't stop, I was quite enjoying it.

Yes, we did know about Stop press cutouts having the ability to be transferred both to (and from) both machines using Micro Design... but what we'd like some techno-buff to tell us is why other screens cannot be transferred? How are cutout screens stored so differently from, say, Art Studio screens or Stop Press ones?

Ah! The back issue of WACCI. At the moment we are out of stock of the December 89 issue and to be honest it may be a while before we have time enough to get some more made up. Do you want to hang on a little longer or do you want *ONG* to increment your subs by an extra month?

Either way, you can rest assured that we never forget about outstanding orders for back-issues.

Now to your 'Silly' disc problem. There is a program that comes supplied on disc with the Dk'tronics Disc that 'patches' the standard version of CP/M+ so that it will recognise the C: drive. If you didn't receive it with the disc, then give Datel a call and ask for your copy.

Yes, several people have succeeded in persuading a Dk'tronics 'Silicon Disc' into believing that it can also be a 256k memory expansion, including *ONG* himself!

The article that appeared in AA was... err... heavily inspired, shall we say, by an article that appeared in the August 1988 issue of WACCI.

But the WACCI article not only dealt with the hardware solution, Auntie John and Alex Aird also showed how it could be done by from the software. Always a more elegant solution.

To save you ordering a currently non-existent back-issue, I have taken the liberty of reproducing the appropriate sections of the article. Over to AJ.

<<Potplant tells me that the 256K Silicon Disc can act as a memory expansion without any hardware modifications.

The RAM in the unit can be banked into the address space from &4000 to &7FFF just like the memory in a CPC6128. If you look at page 81 of the D'X Tronics Peripheral Manual (Edition 1) you can see that *OUTing* the port at &7F00 banks in the RAM pages.

By writing a small routine to emulate the firmware call on the CPC at &BD5B (like I did for my first Concept Disc) there is no reason why it wouldn't act as a 256K CPC.

Using such a system, with VIDI for example, would allow sixteen frames to be grabbed and stored in memory at any one time. Like to lend me it? -AJ.>>

And now over to Alex Aird who gives a Basic program that does the trick... <<The Dk'tronics extra memory banks can be accessed directly from basic. Extra banks are always brought into the memory map at &4000 to &7FFF. The command to use is:-

```
OUT &7f00,n
```

where n is a bit significant value for which memory configuration is to be selected. When the Amstrad is first switched on:-

n=&xl1000000 in binary or &C0 in hexadecimal or 192 in decimal

OUT &7F00,&C0 will always restore the normal memory configuration so you can type *OUT &7f00,192* or *OUT &7f00,&xl1000000* if you want.

The Amstrad CPC will accept numbers in any format, use a variable if you like. eg. a=192:OUT &7F00,a

Memory can be thought of as being in banks of 16k and 4 banks make a block of 64k. The second 64k on a CPC6128 or a 64k memory expansion on a CPC464/664 can be thought of as block 0. You can fit up to 512k of extra memory making 8 blocks of 64k numbered from 0 to 7.

Extra banks can be thought of as being numbered from 0 to 3. This numbering system helps when you want to find out the value of n for each bank of 16k. The block numbers for a maximum of 512k of extra memory are:-

```
000 = block 0
001 = block 1
010 = block 2
011 = block 3
100 = block 4
101 = block 5
110 = block 6
111 = block 7
```

Bank numbers for each 16k block are:-

```
00 = bank 0
01 = bank 1
10 = bank 2
11 = bank 3
```

Bits 5,4 and 3 denote the block number. Bits 0 and 1 denote the bank number. Bits 7,6 and 2 are always 1 eg:-

```
block 0 bank 0

Bits 5,4,3
:
: bits 0,1
:
:
n=&X11 000 1 00.
```

so *OUT &7F00,&X11000100*
block 2 bank 1 n=&xl1 010 1 01
so *OUT &7F00,&X11010101*

The 64k Memory and the 2nd 64k on a 6128 is block 0.

The 64k Silicon disc is block 0

The 256k Memory is blocks 0 to 3

The 256k silicon disc is blocks 4 to 7

The Basic program in Fig 1. may make things easier.

```
10 block$=bin$(0,3)
20 bank$=bin$(0,2)
30 gosub 100
40 rem rest of program
.....
.....
99 end
100 a$="11"
110 b$="1"
120 n=VAL("&X"+a$+block$+b$+bank$)
130 OUT &7f00,n
140 return
```

Fig 1.

This little program switches in block 0 bank 0 into the 16k memory space from &4000 to &7fff. To switch in other blocks simply change the values of block\$ and bank\$ -AA.>>

There you go Tony, what a helpful band of meddlers we are eh? -Joolz.>>

BIG IS BEAUTIFUL

Dear Joolz, Dos is just a little comment on the battle of the Rodos versus Randos. There is, as far as I am concerned one clear winner, RANDOS. Simply because I don't have a Rom-box but what the heck, there are some winners and some losers.

Under CP/M+ my little 3.5 disks do all I expect of them. The following all work:-

Atlast, CP/M+ Prottext, Supercalc, VDE and all the WACCI CP/M PD disks I have tried. I even have a 53000 word dictionary which it says is 18% of disc. It lies as it is about 67% of the allocated 356k. With the aid of my extra 256k memory + 256 Silicon Disc I manage to make a backup copy from time to time. So if CP/M is your scene RANDOS is for you.

What about jolly old AMSDOS. There are some problems, some big, some not

so big. First of all normal Basic progs will run OK from your big disc.

I have one disc of odd little games which run OK. What about things like TASWORD, MASTERCALC and MASTERFILE no problem provided you work off a program which has been copied on to a big disc. I don't have Art Studio but if it is not protected and can be copied then copy it to a big disc and run it from that. It may work.

All has not been well however as in some cases the Machine Code for RANDOS may cause programs not to run. Stop Press and AMSDOS Prottext are the two main casualties. Stop Press cannot find CONTROL which is at &4000 and Prottext does not want to know. Mini Office II and Brunword cannot be copied so I cannot do much with them. Maybe someone out there knows better.

I use a 664 with extra memory and a 6128 chip together with a 256 Silicon Disc. My 3.5 drive was from Siren and when it packed in a few weeks ago it was returned at a very reasonable price in ten days.

If any one out there does not have a big disc machine I can recommend them. They really are good.

A subscription for one year is enclosed for the best little mag in the country. All the best,

Evan Macmillan
Portsmouth

<<Thanks for the information Evan. We did a 'nearly definitive' piece called 'DOS Wars, last month but it looks as though this subject is set to continue on for some time yet. His Miseryness grunted his whole-hearted agreement with your comments about Randos, it's his favourite too -Joolz.>>

A NON-SUB WRITES...

Dear Joolz, I am not a member but I read WACCI quite a lot.

Can congratulate you on a truly superb magazine. My favourite articles in your magazine are Auntie John's Diary, Fair Comment, Hardware reviews, Thanx 'n' Stuff, a Passing Thought and Poking in The Library.

Like I said earlier I am not a member and I read Andrew Norris's

FAIR COMMENT 9 SOUTH CLOSE, TWICKENHAM MIDDLESEX TW2 5JE

copy. Because of this I hope that you do not mind me sending you this letter. Please put it into Fair Comment. Some questions...

1. Why do you refer to the CPC as 'Arnold.'
2. Can we see more CP/M (yawn.)
3. Looking back at old issues, is the cover on issue 36 of you and *ONG*? Sorry this isn't on disc.

Kevin Blain
Taunton

PS.. I like cats too.

PPS. I like the name Joolz.

<<And I like the name Kevin as well, young sir. Listen, I'm not really supposed to put letters from people who don't belong to WACCI into Fair Comment. But as *Old Grumpy Guts* has got his back turned at the moment I'll let you through the net...

1. The CPC is known as Arnold because that was the code name it was given by Amstrad while it was being designed. Arnold is an anagram of Roland and Roland Perry was the man that headed the CPC's development team.
2. Yes.
3. No it's Phil Morely and myself. Shame on Andrew Norris for lending you his copies of WACCI and not trying to persuade you to join -Joolz.>>

FAIR COMMENT

Dear Sirs, have just received the sample copy of WACCI and am delighted to discover a magazine that does not assume that its readers are fourteen years old. Cover to cover and not a blessed games review to be found, sheer bliss. Twelve subs please.

Paul James
Leeds

<<Hi Paul. We try our best to please. It's our policy not to include games reviews but there is the occasional adventure game review -Joolz.>>

The Bellaby File

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

THE FIRST BIT

This month we're taking a look at CP/M control codes, random access files, sorting text files and arrays. That's all. Nothing, really.

So power up the old machine, go :cpm and we're off.

THE PROBLEM PAGE

Mike Ahearne phoned asking how to use the password protection offered by CP/M. The simple answer is "don't." Here are three good reasons:-

If you forget the password you are stuck.

If you really want to keep the information on a disc secret, lock it away, it's far safer.

Lastly, anyone who has a good understanding of machine code can write a program to remove password protection.

BZZZ BZZZ

Yes, I have found a bug in the way Cobol handles disc files. If file length exceeds 16,384 bytes, then the data can become corrupted.

Those among you who enjoy maths will notice that 128x128 is 16,384. 16,384 bytes is also the size of the buffer that Cobol allocates for disc files, could this be why problems occur?

There are two methods of overcoming this problem.

The first is to stick to a record length of 128 bytes which does not cause corruption when you exceed the file size limit.

The second is to use more than one file to hold your data, to avoid exceeding the 16,384 byte limit. As Cobol allows you to open a maximum of

9 files, splitting data into different files allows you to access up to 144k of data.

Not all Cobols have this bug (but JRT Pascal has it too.) Be aware of it- it may come in handy- or not, as the case may be.

GO FORTH!

<<Can I take any more of this? -Ed.>>
Wacci have received a number of queries about Forth, so Alan Tilling and I are putting together a series of short articles covering programming in Forth. We'll be learning the language as we write the series so fasten your seatbelts for a bumpy ride.

And now... this:-

CONTROL CODES

The control codes used by CP/M are different to those used by Basic and they are well worth learning for use in an emergency.

The following codes are accessed by holding down the Control Key and pressing the required letter.

Ctrl/P

Echoes screen output to your printer; if you do this correctly you are rewarded by a happy 'beep' from the sound system. If the printer is not ready you are rewarded with one of CP/M's infamous scrolling messages advising you that your LPT is not ready. Printing can be switched off by pressing Ctrl/P again (no happy beep this time).

Ctrl/[

Has the same effect as pressing the ESC key. This crops up quite often,

especially in VDE, after you have forgotten to run the Setkeys program and cannot save the umpteen pages of text that you have typed in. And if you haven't done it yet- you will.

Ctrl/S

This is a goodie. It freezes the screen display, so if you are watching a long listing flash by and you want to read it, hit Ctrl/S and it will stop. It is very useful when compiling Cobol programs; you can stop the compiler and read error messages as they occur.

Ctrl/Q

Is the opposite of Ctrl/S, it starts the screen display off again.

I know we're not supposed to be thinking about this sort of thing but these two work in MS-DOS and Unix as well. As does the next control code which is as fundamental to CP/M as Joolz-hood and Jiffy bags are to all of us...

Ctrl/C

This is the Big One, Brian. It aborts the program that is running. If the program is doing a lot of writing to the screen you may need to halt the screen output using Ctrl/S before the Ctrl/C command works. But it's the way to stop almost anything in CP/M (and in MS-DOS. And Unix.)

Whatever you're doing in CP/M that lot is worth knowing. Also, after a while, they begin to feel cosy. Home is where Ctrl/C is.

Now, back to Cobol...

FILE HANDLING

We continue the file handling routines with a program that uses the data file created last month, so you will need to type in and run program eighteen from last month (if you have not done it already) to create the data file (random.dat) used in program twenty.

Program twenty introduces you to one new command, REWRITE. This command is used to re-save a record to disc.

Let me remind you that when you use random access files, you must read the record before you save (rewrite) it to your disc.

The REWRITE command uses the format,

```
REWRITE "record name"
      INVALID "do something".
```

The INVALID statement allows you to control the situation if an error is encountered, rather than letting Cobol control the course of events.

So it's flex your fingers time. Here's program twenty, all you need to do is type it in.

PROGRAM TWENTY.

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

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.
```

```
OPENING-SCREEN.
  DISPLAY 'Amend Records'.
  DISPLAY ' '.
  DISPLAY
```

```
      'Enter the record number '.
  DISPLAY 'you wish to amend:'.
  DISPLAY '      0 = End program'.
  DISPLAY '1 to 9 = Amend Record'.
```

ALLOW-SELECTION.

```
ACCEPT KEYBOARD-ENTRY.
IF KEYBOARD-ENTRY NOT NUMERIC
  DISPLAY 'Invalid Entry'
  DISPLAY
      'Press RETURN to Re-Enter'
ACCEPT KEYBOARD-ENTRY
GO OPENING-SCREEN
END-IF.
```

CHECK-IF-ZERO.

```
IF KEYBOARD-ENTRY EQUAL '0'
  DISPLAY ' '
  DISPLAY 'End Program Selected'
  DISPLAY ' '
  DISPLAY
      'Closing File, Please Wait'
CLOSE RANDOM-FILE
STOP RUN
END-IF.
```

VALID-ENTRY.

```
MOVE KEYBOARD-ENTRY
      TO RECORD-NUMBER.
READ RANDOM-FILE INVALID
  DISPLAY 'Read Error, Record '
      RECORD-NUMBER.
```

DISPLAY-RECORD.

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

```
      NAME.
```

```
AMEND-RECORD.
  DISPLAY ' '.
  DISPLAY 'Enter New Name'.
  DISPLAY ' '.
  ACCEPT NAME.
```

SAVE-NEW-NAME.

```
REWRITE NAME INVALID
  DISPLAY
      'Error When Saving Data'.
```

JUMP-TO-OPENING-SCREEN.

```
GO OPENING-SCREEN.
```

That didn't take too long to type in did it? Yes it did I hear you cry. So you're not a fan of typing in listings, well in that case:-

```
*****
*          *****          *
*          *                  *
*          * PLUG PLUG PLUG *
*          *                  *
*          *****          *
*          *                  *
*          * Get all the example programs *
*          * used in this series from WacCI. *
*          *          WRITE TODAY,          *
*          * DON'T WEAR YOUR FINGERS AWAY! *
*****
```

This program highlights some of the real advantages of Cobol; the near English structure, allows it to be easily read and understood by others.

The use of meaningful identifiers and paragraph names helps here, the paragraph SAVE-NEW-NAME does exactly what it says.

The inseting of commands within a paragraph and the use of blank lines to separate paragraphs makes the program more readable.

cobolCobol

IT OCCURS TO ME...

Cobol allows you to dimension your identifiers by using a numeric identifier subscript... Reset, too technical, try again.

Ever wondered how you can link together lots of related data, such as a list of names, without going through the laborious process of declaring then in an extensive list of similar sounding names. Yes? Every Saturday night? Then read on, this bit is for you.

You *could* write a program like this:-

```
WORKING-STORAGE SECTION.
01 NAME-LIST.
  03 NAME-1 PIC X(30).
  03 NAME-2 PIC X(30).
  03 NAME-3 PIC X(30).
  03 NAME-4 PIC X(30).
  03 NAME-5 PIC X(30).
  03 NAME-6 PIC X(30).
  03 NAME-7 PIC X(30).
  03 NAME-8 PIC X(30).
  03 NAME-9 PIC X(30).
  03 NAME-10 PIC X(30).
```

and so on.....

Boring eh? So what else can we do? Well, we can dimension an array by using the OCCURS command.

ARRAY FOR THAT

<<I really can't take this -Ed.>>

An array allows you to use the same identifier name to hold more than one item of data. This is achieved by giving the identifier both depth and width, this is done in the WORKING-STORAGE SECTION of your program using the OCCURS command, the OCCURS command gives depth to an identifier, whilst the PIC(ture) command gives the width, as in:-

```
WORKING-STORAGE SECTION.
01 NAME-LIST.
  03 NAME PIC X(30) OCCURS 10.
```

This dimensions the identifier called NAME to 30 bytes of data with a depth of 10 layers.

To get at each layer we have to amend the way we use the identifier by subscripting it with a depth value:-

```
NAME(4)
```

This tells the program that we want the fourth layer of the identifier, in this case the subscript is the (4).

An alternative to this method is to subscript the identifier with another identifier.

At this point I have decided that writing about a complex subject is not my scene, so let's have example of what I have been trying to explain.

```
PROGRAM TWENTY ONE.

IDENTIFICATION DIVISION.
  PROGRAM-ID. Program Twenty One.

ENVIRONMENT DIVISION.

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

DATA DIVISION.

WORKING-STORAGE SECTION.

01 TOTAL-RECORDS.
  03 NAME PIC X(30) OCCURS 10.
01 COUNTER PIC 99.

PROCEDURE DIVISION.

DATA-ENTRY.
  DISPLAY 'Enter 10 Names'.
  DISPLAY ' '.
  MOVE 0 TO COUNTER.
  PERFORM ENTER-NAME 10 TIMES.

DATA-DISPLAY.
  DISPLAY 'The Names Entered Are:'.
  DISPLAY ' '.
  MOVE 0 TO COUNTER.
  PERFORM DISPLAY-NAME 10 TIMES.

END-PROGRAM.
  STOP RUN.

* PERFORM ROUTINES *

ENTER-NAME.
  ADD 1 TO COUNTER.
```

```
ACCEPT NAME(COUNTER).
DISPLAY ' '.

DISPLAY-NAME.
  ADD 1 TO COUNTER.
  DISPLAY NAME(COUNTER).
```

Now as you can see from this example the OCCURS command dimensions the identifier NAME and gives it 10 layers of information. Each layer is accessed by another identifier called COUNTER.

The best use of the OCCURS command is shown in the example. Apart from making the program shorter, it allows you to use an identifier within a loop. Then, each time you pass through the loop, you access a different layer of the identifier, because the subscript (COUNTER) has been increased (by adding 1 to the value of COUNTER.)

The OCCURS command must be specified as part of the WORKING-STORAGE SECTION and cannot be used on a level 01 identifier.

cobolCobol

SORT IT OUT

We are now going to sort the data held on disc into alphabetical order using the same data file *<<not, again?>>*

An Alphabetic sort is achieved by comparing the data held in the identifiers and, if they are in the wrong order, swapping them over.

You compare them using the IF... END-IF command. When you compare alphanumeric data, you look at the ascii values of the characters, so open your manual and look at the ascii chart which gives you the value for each character.

The next program sorts the disc file into alphabetical order and then displays the sorted list. There are many methods of sorting data; this is one of the easier to follow and use.

cobolCobol

INTEGRITY

Before we move onto the next program I should mention that John Hilton has written to me and asked "what has

happened to structured programming?" For those of you who are unfamiliar with the term, structured programs do not use the GO command (or 'GOTO' in Basic.)

The theory here is that the GO command allows the programmer to jump around the program, which leads to a messy program which is difficult to follow. Structured programs also need to be carefully planned in advance, which means that they *ought* to be better written.

College tutors insist that programs are written in a structured manner, even if they are less efficient than a similar non-structured program.

So let's see; program twenty two has been written without the use of GO commands. Have a read and see if it is easier to follow.

When you write your own programs it will be your decision as to which method you use. My preference is for the one that gives me the best result, measured in 'speed of use' and 'ease of writing' - but then I'm just an old fashioned boy.

PROGRAM TWENTY TWO.

IDENTIFICATION DIVISION.

PROGRAM-ID. Program Twenty Two.

* This program sorts the data file
* RANDOM.DAT into alphabetic order
* without using the 'GO' command.

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 REC-NUM.

DATA DIVISION.

FILE SECTION.

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

WORKING-STORAGE SECTION.

01 REC-NUM PIC 9.
01 TEMP-NAME-1 PIC X(30).
01 TEMP-NAME-2 PIC X(30).

PROCEDURE DIVISION.

OPEN-FILE.

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

ORIGINAL-LIST.

DISPLAY ' '.
DISPLAY 'Original List'.
MOVE 0 TO REC-NUM.
PERFORM READ-DISPLAY 9 TIMES.

SORT-1.

DISPLAY ' '.
DISPLAY
'Sorting File, Please Wait'.

MOVE 0 TO REC-NUM.
PERFORM SORT-2
UNTIL REC-NUM EQUAL 8.

MOVE 0 TO REC-NUM.
PERFORM SORT-2
UNTIL REC-NUM EQUAL 8.

MOVE 0 TO REC-NUM.
PERFORM SORT-2
UNTIL REC-NUM EQUAL 8.

MOVE 0 TO REC-NUM.
PERFORM SORT-2
UNTIL REC-NUM EQUAL 8.

MOVE 0 TO REC-NUM.
PERFORM SORT-2
UNTIL REC-NUM EQUAL 8.

MOVE 0 TO REC-NUM.
PERFORM SORT-2
UNTIL REC-NUM EQUAL 8.

MOVE 0 TO REC-NUM.
PERFORM SORT-2
UNTIL REC-NUM EQUAL 8.

MOVE 0 TO REC-NUM.
PERFORM SORT-2
UNTIL REC-NUM EQUAL 8.

NEW-LIST.

DISPLAY ' '.
DISPLAY 'Sort Completed'.
DISPLAY ' '.
DISPLAY 'Sorted List'.
DISPLAY ' '.
MOVE 0 TO REC-NUM.
PERFORM READ-DISPLAY 9 TIMES.

END-PROGRAM.

DISPLAY ' '.
DISPLAY 'End Of Program'.
CLOSE RANDOM-FILE.
STOP RUN.

* PERFORM ROUTINES *

SORT-2.

ADD 1 TO REC-NUM.
READ RANDOM-FILE
INVALID DISPLAY 'Error'.
MOVE NAME TO TEMP-NAME-1.

ADD 1 TO REC-NUM.
READ RANDOM-FILE
INVALID DISPLAY 'Error'.
MOVE NAME TO TEMP-NAME-2.

IF TEMP-NAME-1 GREATER TEMP-NAME-2
MOVE TEMP-NAME-2 TO NAME
MOVE TEMP-NAME-1 TO TEMP-NAME-2
MOVE NAME TO TEMP-NAME-1
SUBTRACT 1 FROM REC-NUM
READ RANDOM-FILE
INVALID DISPLAY 'Error'
MOVE TEMP-NAME-1 TO NAME
REWRITE NAME INVALID DISPLAY
'Error'

ADD 1 TO REC-NUM
READ RANDOM-FILE
INVALID DISPLAY 'Error'
MOVE TEMP-NAME-2 TO NAME
REWRITE NAME INVALID DISPLAY
'Error'

END-IF.

SUBTRACT 1 FROM REC-NUM.

READ-DISPLAY.

ADD 1 TO REC-NUM.
READ RANDOM-FILE
INVALID DISPLAY 'Error'.
DISPLAY REC-NUM ' ' NAME.

It's worth taking a close look at the paragraph called SORT-2 and noting how many commands take place within the IF command; I make it eleven.

There is one new command in the program, SUBTRACT, which as you may have guessed is the opposite of ADD.

The SUBTRACT command can be used in several formats:

```
SUBTRACT value FROM identifier.
ie: SUBTRACT 106 FROM TOTAL-USED.
```

```
SUBTRACT identifier FROM identifier.
ie SUBTRACT NUMBER-ISSUED
FROM HELD-IN-STOCK.
```

```
SUBTRACT value/identifier
FROM identifier
SIZE ERROR 'do something'.
```

The SIZE ERROR option allows you to specify what will happen if an error occurs.

```
SUBTRACT value/identifier
FROM identifier ROUNDED.
```

The ROUNDED option allows the answer to be rounded up or down to the nearest whole number (integer).

cpmCPMcpm

There is a quicker method of sorting data files in alphabetic order, you can use SORT.COM which is available from the PD library CPM-033, 4k, or on either CPM disc 3 or CPM disc 5.

I'll talk about SORT next month, when I have a gander at some CP/M programs.

cobOLCObol

PROGRAMMING NOTE

All the programs used so far have been written so that they are easy to read and understand. They could be written, with less code, to run faster but clarity would have been lost, so I didn't do it. After all, the reason for including the example programs is to allow you to follow what is happening, not blind you with science.

And now a thought that forces itself into my mind:-

What about poor old British Telecom? They have a cash flow problem; now that they're earning almost £8,000,000 a day they are running out of rooms in which to store the cash.

cpmCPMcpm

And now a message from the hooded Men: COMING SHORTLY (to a Wacchi near you)

SID - It will definitely be here next month.

CP/M - PD Software Reviews, all kinds of stuff.

That's it for now, write or phone if you get stuck.

You know it makes sense.

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

0602-725108

I.T.M.A.

AUNTIE JOHN'S CONCEPT DISC

```
C THE
o
n And
t s H
e t y
n p e...)
```

GREEN'S STRIP PONTOON

Embarrassingly awful digitised pictures of Green taking his clothes off, if you play your cards right.

DRIPTONE PLUS

An enhanced version of Dripzone, with 54 possible sheets, digitised pictures, digitised sound, and little twinkly things. Oh yes, it's not Cyan anymore either.

ENGLEBERT

A version of an arcade game that was quite popular some time ago.

SAUCER ATTACK

Basically a machine code shoot things game. But do you feel fulfilled?

THREE DIMENSIONAL MAZE

Totally un-original, but damn fast 3D maze program. Where would we be without logical colours, eh?

BEETLEMANIA

Pure machine code highly graphical game, with ducks and trees and things.

GLOBE

Graphical view of the Earth from any point in Space. (Converted from a BBC computer program, so it must be good).

JUGGLE

Want to learn to juggle? This won't help.

NB: The first two programs mean that the disc will really only run on 128K disc-based machines.

VERY basic BASIC

BY
ALAN TILLING

Letters to:-
Very basic Basic
65 Lawrence Road,
Altrincham,
Cheshire.
WA14 4EL.

THIS MONTH ALAN TILLING PLAYS SILLY MID\$ OFF

Hello everyone, 'tis I. In the last few months you may have noticed some people using the esoteric keywords like `LENGth$` and `MIDdle$`.

If you are not familiar with these terms then read on, all (well some, anyway) is about to be revealed. Have a look at the following program:-

```

10 MODE 1
20 phrase$="WACCI"
30 CLS
40 LOCATE 17,12
50 FOR character=1 TO 5
60 PRINT MID$(phrase$,character,1);
70 FOR delay=1 TO 250:NEXT delay
80 NEXT character
90 FOR delay=1 TO 500:NEXT
100 GOTO 30

```

Right, now to explain what all that does. Line 10 clears the screen and sets up the 40 column mode and line 20 makes `WACCI` a string (of text) variable called `phrase`.

The `CLS` in the next line Clears the Screen ready for the next bit. Now to make sure `WACCI` is in the middle of the screen, `locate` is used to position the cursor at position `x,y`.

The `y` part is half way down the screen at line 12 and to arrive at the `x` part, 5 (the quantity of characters in the word `WACCI`) is subtracted from 40 (the number of columns) and then

the remainder is divided by 2 to get half the spaces in front of and half behind the word.

Now $40-5=35$ and $35/2=17.5$ but the `locate` command only works on whole numbers, so 17 is used. Line 50 is the start of a `FOR/TO/NEXT` loop that will make the program go round 5 times (the number of letters in `WACCI`.) And now for the interesting bit:-

-{VBBVBB}-

Have a look at line 60, 'orrible ain't it? Well, it is a print statement but I think `MID$` needs a bit of explanation...

Consider `PRINT MID$(x$,A,n)`. This means print `n` characters of `x$` starting at the `A`th character from the left. Errr I think an example is called for here. Let's make `x$=WACCI` so if the first three letters were needed then the instruction would be `?MID$(x$,1,3)`. If, for some reason, four letters were required starting from the second character, then the instruction would be (in this case) `MID$(x$,2,4)` and so on.

-{VBBVBB}-

Now, there are two other commands that are worth mentioning here: `LEFT$` and `RIGHT$`. These are similar to `mid$` but are restricted to one end or the other of the string in question.

If we use `x$=WACCI` then `?LEFT$(x$,3)` would yield `WAC` whereas `?RIGHT$(x$,3)` would give `CCI`. So `MID$` is like `LEFT$` but where `LEFT$` *always* starts at the *left hand end*, `MID$` can start at a *specified* number of *characters* from the left hand end.

-{VBBVBB}-

Line 60 says print one letter of the word `<WACCI>` starting (first time around) at character number one and the semicolon says do not throw a new line. This means that it prints each letter of `phrase$`, one at a time.

To make it more dramatic, a delay is inserted at line 70. I've made its length 250 long (250 whats long I'm not sure but if you mess about with this figure, you'll get the general idea.) Line 80 signifies the end of the `FOR/TO/NEXT` loop and line 90 causes another delay but this time twice as long as before.

Notice that the same name (`delay`) is used for both loops. Once the first loop is finished, its name becomes available for use again. The actual name doesn't matter, it could be `cucumber` for all the CPC cares but the name `delay` makes its meaning and use immediately obvious *to us humans*.

Notice also that in lines 70 and 90 the last term `<NEXT>` is apparently different. Again `NEXT` (what ever) is only for us. As far as the computer is

The easiest way to read this is to start at the innermost set of brackets and work outwards, like this:-

(phrase\$)	The variable name <i>must</i> be in () - one of the laws of Basic.
(40-LEN(phrase\$))	40 minus the LENgth of (phrase\$)
(40-LEN(phrase\$))/2	Half the above value.
INT((40-LEN(phrase\$))/2)	The above No. rounded down to a whole number

Fig 1.

concerned lines 70, 80 and 90 could all have ended with just NEXT - Arnold would have sorted out which was which and would have been just as happy. Line 100 starts the ball rolling all over again.

-{VBBVBB}-

All this lot is all very well but we humans have had to do an awful lot of work to get what we wanted. We had to work out how long phrase\$ was, then do some sums to ensure that it was printed in the middle of the screen.

Hang on a second, what have we got this computer for? We're doing all the work! (Ed. is this screamer allowed?) Let's attack this program.

Instead of telling *it* what phrase\$ is, let *it* ask us for a change. So alter line 20 to LINE INPUT "Please type in your message ",phrase\$. (Line input is similar to plain INPUT but allows the inputting of commas etc.)

You can type in any word or sentence but, for simplicity, stick to less than 40 characters (including spaces, don't forget.)

If phrase\$ is now *any length* then line 50 will need to know how long it is. Edit line 50 to FOR character=1 to LEN(phrase\$)

LENgth(phrase\$) will make Arnold count up the quantity of characters in your message which saves us work and I'm all for that.

-{VBBVBB}-

Ahem. And now for something completely different... My dearest little WACCI

friends. I am currently taking small donations for the A.L.A.N appeal (I fancy going to the Bahamas this year.)

Please send your donations (nothing less than £10 notes) to me, at the address shown on the opposite page. I can assure you that all the money is spent wisely ie. on booze, sight seeing and if necessary, bribing customs officers. No offers? Ah well back to it...

-{VBBVBB}-

The only other job that needs doing is to make sure the message is printed in the middle of the screen and we will make our CPC do all the work again. Take a look at this and then have a look at Fig 1. up above.

INT((40-LEN(phrase\$))/2) *Woweee...*

So edit line 40 to the following
40 LOCATE INT((40-LEN(phrase\$))/2),12
then save the program and sit back and watch your trusty CPC having to do all its own sums.

-{VBBVBB}-

If you need to put up a sentence with that has more than 40 characters - remember letters, spaces and punctuation as well, you will have to change to mode 2 and change the 40 in line 40 to 80.

Well that's all the Basic Basic you get for this month, have fun till I see you again. Bye for now... Alan.

THOSE WACCI GAMES DISCS

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 and Magic Squares.

GAMES DISC 2.

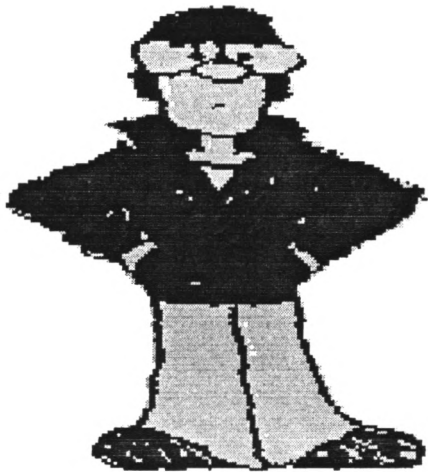
Bomber, Pontoon, NPC, Snakes, Diamond Miner, Pacplant, The Pacplant Cheat, Star Chase, Grid Warrior, Quiz, Jigsaw2, UFO Escape Gomoku, Tunnel Dive, Hotrods, Nomopoly and Sketch.

GAMES DISC 3.

Caverns of Skeletor, XSum, Go, Wild, Fruitrun, Darts, Jigsaw3, Backgammon, Beetlemania, Masters of Midworld, Championship darts, War and 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's Diary



IS IT A MAN?- IS IT A WOMAN? - NO IT'S YOUR FAVOURITE AUNTIE JOHN AGAIN

Oh, my head. If you only knew the pain, the agony, the downright torture resulting from every keypress...

Yup, it was Green's birthday again. And he's going through some kind of balloon fixation at the moment. Say no more. Please.

00000000

OK. You remember I was going on about my new Scalextric set last month? Well I managed to complete the electronic parts and guess what - it worked.

Yup, my trusty CPC now sits alongside the track and keeps track of the laps completed and calculates the time for each lap. It also guesses at a scale speed but this should not be taken as being in any way accurate.

00000000

The circuit works in a very simple manner. It interfaces to the joystick port, so no messing around with edge connectors and the like is needed.

The heart of the circuit is a tiny DIL (dual in line) relay. I found these while looking through a Maplin's catalogue and immediately fell in

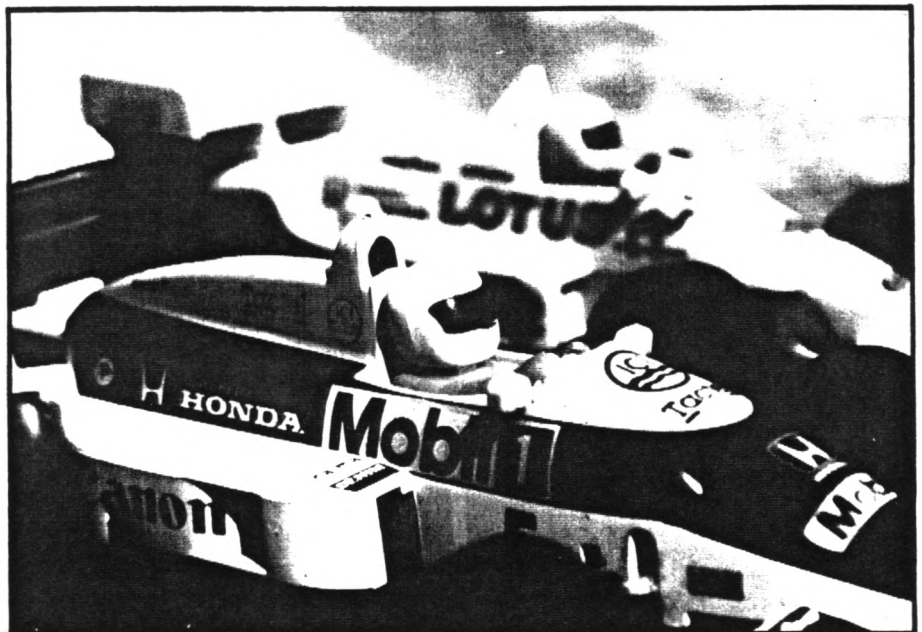
love. They are driven from a 5-volt signal and therefore ideal for our little computer experiments.

00000000

Mr Relay acts like the switch on a joystick and thus its state can easily be determined from a Basic program. Controlling the relay is the fun part.

A common or garden BC109 transistor is used to provide the current needed to drive the relay and the base current needed to toggle the transistor comes from a light sensitive device called a Photo-transistor.

We could have used a Light Dependent Resistor but I have found that these devices did not respond quickly enough to the passing cars.



The only other component needed is a small preset resistor to provide some fine tuning for the transistor. The circuit is powered by a 6volt battery to remove the need for leeching some power from the computer itself. See Fig 1. for the circuit diagram.

00000000

Construction is very simple and can be produced on a small piece of veroboard. The photo-transistor can be joined to a small length of wire and mounted in a piece of track, as shown in Fig 2.

Once you built the circuit and connected the battery, you should be able to hear the relay clicking as you block out the light reaching the photo-transistor. If it doesn't, one of us has made a mistake and I think I know which one.

00000000

Writing the software is the fun part. You can make the program as simple or as complicated as you wish. Next month I'll supply a short listing to get you on the right track (Track! Geddit?)

00000000

Back in the exciting world of magazine publishing and the only thing which keeps me going is the thought that perhaps Verona will give me a call. Sigh...

00000000

EXTRA STUFF

So this bit has not been written to pad out an otherwise sadly lacking article OK? In fact, it's a chance for me to tell you that if you send Steve a disk he'll copy the listing for the Scalextric timer program on to it. There wasn't time to put it in this month's column.

"Ah!" you say, "Caught you out! If there wasn't space, why are you spending time now writing copy to pad out the article?" To which I say, "Errrrm...?" Well I'm glad we sorted that out (sort of.)

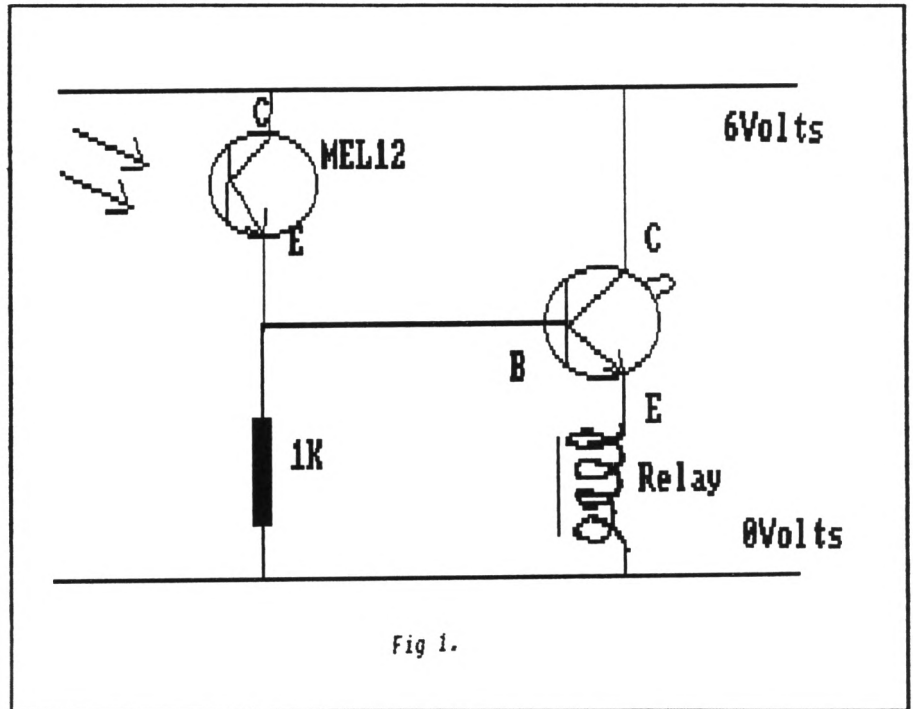


Fig 1.

Do know what I really hate? People pulling out in front of me when I'm driving or riding my mopedbike. They pull out and you have to slam on the anchors. Now that's OK but the really, really, really annoying thing that not even ten seconds after they do this *THEY'LL INDICATE AND TURN OFF THE ROAD AGAIN!* You just wait and see.

As ever, I hope you have had a better one than I've had...

Your Favourite Auntie...



John

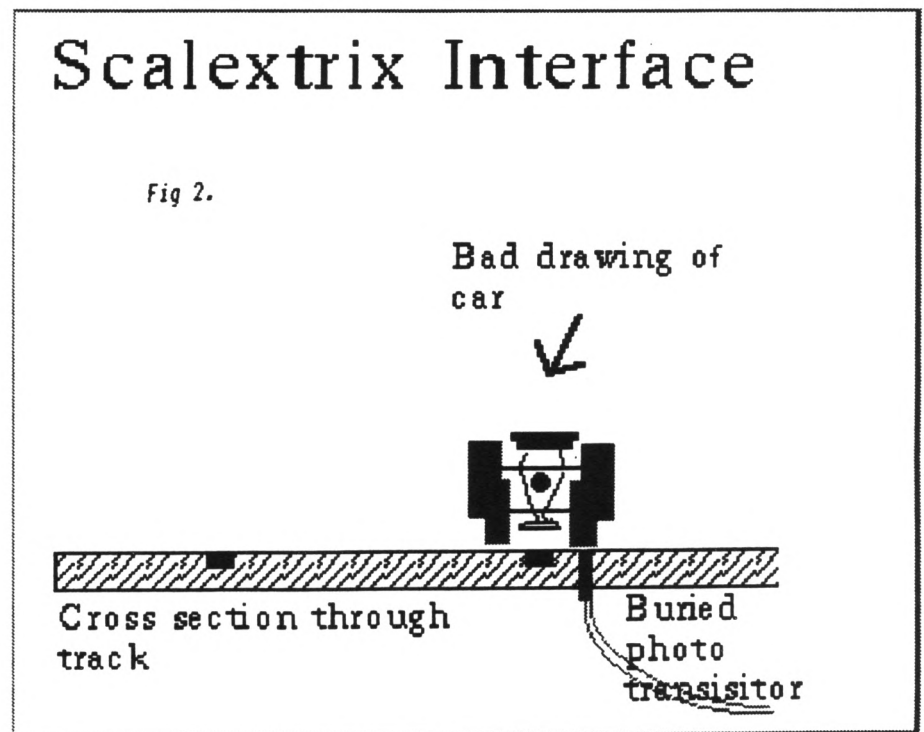


Fig 2.

Strings 'n' Things

PRACTICAL STRING HANDLING BY PAUL DWERRYHOUSE

Last time WACCI came with *"Added Suspense"* and all for the normal cover price. If you remember, we broke an ASCII file down into its individual words and then presented them in the form that a spell checker would prefer to find them. Well, you didn't see the complete program to do this because *SOMEBODY LEFT IT OUT. <<Err -Ed.>>*

Now we're going to do something quite brilliant- we're going to add to and alter last month's listing to make it set out a file in a new format.

And all because of brilliant foresight by the Maestros at Castel WACCI *<<That's quite enough about brilliance -Ed.>>* you'll be able to compare the resulting programs *side by side*.

BE A GOOD STRING

To make the strings behave as we now require, the way we look for a word has to be altered so that all our commas, full stops, and screamers are found, as well as text characters. This means that the ASCII range now has to be between 33 and 126. I've ignored the pound symbol, ASCII value 163 but this should be checked for in a full blown program.

INTO FOCUS

Lines 10 to 50 load any pure ASCII file of your choice. Line 60 asks you for your new format and the next line checks if the value is within our range. I've chosen 20 to 80 simply because that's the focussing range of my favourite zoom lens *<<that's enough photography -Ed.>>*

Line 80 sets both the value of the line counter 'x', for the new lines of

text, and the value of 'c', which will hold the length of the current line before the next word is added to it.

LOOP THE LOOP

Lines 90 to 110 form the main loop. I bet you wish all main loops were this big.

Line 100 prints the line that's being passed to the sub-routines so that we have something to look at while it all grinds away *<<that's enough about grinding away -Ed.>>*

TEXT CRUNCHING

Over to line 140 now and this plus 150 do the simple checks to see if there's anything actually on the line. If this routine finds an empty string- signifying nothing, Brian- then, before returning to look at the next line, it inserts a double line feed by adding two to the value of the counter x. If you are in the habit of leaving a blank line between your paragraphs, as I am, then this double line feed puts one into your reformatted text.

Lines 160 to 190 form the next loop, as last month but check for the greater ASCII value range. If the start of a word is found then off to line 200.

The end of the word is found by the same method but this month it is passed to line 220 as found.

Now line 220 passes the word, stored in 'find\$', on to the next sub-routine but only if it is shorter than or equal to the new format length. This is not because I hate long words- I don't know any so how can I not like them- but the string might not be a word but a page break

made up of asterisks. In that case it will be longer than any line you might try to fit it on and I've elected to ignore it.

To keep this listing short I've not made it very sophisticated but if you wanted to be super-human you could, in such a case, check the contents of 'find\$'. If it was a page layout feature you wanted to keep (how about that row of asterisks?) you could arrange to have one in your new format too.

Before jumping to the last sub-routine at line 250, line 230 updates the loop counter 'h' ready to look for a new word.

The sub-routine starting at line 250 is the one which builds up the new lines of text, storing them in the variable called 'textout\$'. First we check if the word will fit onto the current line. The variable 'f' holds our new line length, 'c' holds the current position along the line. The amount of space left is calculated and its value placed in a variable called 'room'. If the length of the word is greater than 'room' then a line feed is called by line 250. So this is word-wrap? Yup.

At line 260 we add our word to the current line and give a new value to 'c'. Notice that one is added to the value of 'c' at this point; this takes us to the starting point of the next word. Line 270 adds this space only if the line still has some room left. Line 280 throws in a line feed if the current line is full. Line 300 is the line feed, adding one to the line counter. It also resets the line position counter.

GREAT EXPECTATIONS

DID YOU KNOW JANE AUSTEN USED ANSWER?

How does the program perform? I've passed a number of my files through it and it does very well. However, the likes of names and addresses are scrambled and anything which vaguely looks like a table comes out looking a bit of a mess. Mind you, since it is intended to work with words, this is not surprising. The program has to be able to handle justified text and a table can't fit this bill.

Line 120 prints the final results to the screen for us to see.

The program isn't so different from last month's and that was an assembly of fairly simple routines, a bunch of Basic soldiers. Put 'em together and they begin to work like an Army. Now the Army can actually do something useful...

AT LAST

Next month I'll finish off with a word search routine which will allow you to find and replace a word.

And now.. the programs *(yes, two!)*

First, this month's:-

```
10 MODE 2:CAT:DIM
   text$(1000),textout$(1000)
20 INPUT "File name ";f$
30 OPENIN f$:n=1:WHILE NOT EOF
40 LINE INPUT#9,text$(n):n=n+1
```

```
50 WEND:CLOSEIN:n=n-1
60 INPUT "New format 20-80";f
70 IF f<20 OR f>80 THEN 60
80 c=1:x=1
90 FOR y=1 to n
100 PRINT text$(y):GOSUB 140
110 NEXT
120 FOR y=1 to x:PRINT textout$(x)
130 NEXT:END
140 IF text$(y)="" THEN x=x+2:c=1
   :RETURN
150 IF text$(y)=SPACE$(LEN
   (text$(y))) THEN x=x+2
   :c=1:RETURN
160 FOR h=1 to LEN(text$(y))
170 askey=ASC(MID$(text$(y),h,1)
180 IF askey>32 AND askey<126
   THEN GOSUB 200
190 NEXT:RETURN
200 spacpos=INSTR(h,text$(y)," ")
210 IF spacpos=0 THEN find$=
   RIGHT$(text$(y),LEN(text$(y))
   -h+1) ELSE find$=
   MID$(text$(y),h,spacpos-h)
220 IF LEN(find$)<f+1 THEN
   GOSUB 250
230 IF spacpos>0 THEN h=spacpos
   ELSE h=LEN(text$(y))
240 RETURN
250 room=f-c:IF LEN(find$)>room
   THEN GOSUB 300
260 textout$(x)=textout$(x)+find$
   :c=LEN(textout$(x))+1
270 IF c<f THEN
   textout$(x)=textout$(x)+" "
280 IF c>f THEN GOSUB 300
290 RETURN
300 x=x+1:c=1:RETURN
```

And now, last month's program:-

```
10 MODE 2:CAT:DIM text$(1000)
20 INPUT "File to load";f$
30 OPENIN f$:n=1
40 WHILE NOT EOF
50 LINE INPUT#9,text$(n):n=n+1
60 WEND:CLOSEIN:n=n-1
70 FOR f=1 to n
80 temp$=UPPER$(text$(f)):GOSUB 110
90 NEXT
100 END
110 IF temp$="" THEN RETURN
120 IF temp$=SPACE$(LEN(temp$))
   THEN RETURN
130 FOR h=1 to LEN(temp$)
140 askey=ASC(MID$(temp$,h,1))
150 IF askey>64 and askey<91 THEN
   GOSUB 180
160 NEXT
170 RETURN
180 spacpos=INSTR(h,temp$," ")
190 IF spacpos=0 THEN find$=
   RIGHT$(temp$(f),LEN(temp$)-h+1)
   ELSE find$=
   MID$(temp$(f),h,spacpos-h)
200 a=ASC(RIGHT$(UPPER$(find$),1))
210 IF a<65 or a>90 THEN find$=
   LEFT$(find$,LEN(find$)-1):
   GOTO 200
220 PRINT "<;find$;>";
230 IF spacpos>0 THEN h=spacpos
   ELSE h=LEN(temp$)
240 RETURN
```

Next month, too, something that I have found for you Protex users.

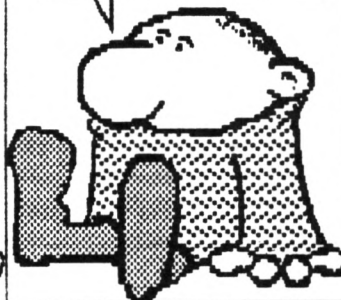
Life....

by Steve, John and Andy.

I don't want to
achieve immortality



...through my work.
I want to achieve



..it through
not dying!



RESCUE MISSION

PETER CERESOLE LEAPS TO THE RESCUE

BRIDGING THE GAP

Okay, so now we've done it; Steve <<who? -Ed.>> has hauled up the banner with the Strange Device. "Welcome PCW Owners" it says.

---<<OO>>---

So what's new? They always *were* welcome. WACCIites are welcoming people. Just because the poor Joyceians can't fit sideways ROMs and have to wait for a year and a day for their operating system to fight its way into the machine every morning, doesn't mean that they aren't entitled to the common courtesies.

But the special tie that binds us all is, of course, the three inch disc. Just because A M Sugar got it wrong and we are the only people In The World (give or take a few million) who can't use 3.5 inch discs doesn't mean that we can't feel smug and warm and friendly in our isolation.

---<<OO>>---

Exchanging data between a PCW and a CPC was a total bowl of cherries. There's a PD utility (CPN-089 PCW) to allow a CPC to read and write to PCW system discs. With a data disc it's even simpler. Take it across, pop it in and grunt, graunch, the information age is real.

Except... Have you walked down the office corridor and seen all those funny white coloured PCWs? Yeah, the 9512. The difference with the 8000 series is that the only drive available for them is the 706K version. Oh, it'll read a 178K disc

okay, so you can still work at home, in a civilised way, on the CPC and bring in the deathless on disc to read into the 9512 at the sausage factory; that's fine.

But what about the report started at work that you'd rather polish up at home? Not so easy.

---<<OO>>---

There's no simple way to get a CPC to read a 706K disc. To start with, the drive has only one head so you have to flip the disc manually to read both sides. Secondly the head in the CPC drive lays down 40 fat tracks instead of 80 thin ones. You can't make it read 80 tracks because it would read two at once. Confusing.

No, the solution is to make the PCW do the work. If you had a utility to make the drive double step and use only one head to write to the disc, you'd get what's effectively a CPC disc with narrow tracks. Nice idea? Yes.. But not trivial. Not at all. Could you write it? Neither could I.

Meanwhile, same discs, same manufacturer, same operating system. Can't read it. S*d. <<What's SID.COM got to do with it? - Ed>>

ENTER THE CAVALRY

Over the hill, down the arroyo, the bugle's note. As the Winchester repeater gave the cowboys the rate of fire to ensure that *their* ancestors and not Geronimo's would make the movies, Three Inch Software's Rescue is the tool that integrates the Amstrads and delivers victory in the Format Wars.

WHAT'S UP DOC?

Rescue copies files from high density PCW 9512 discs to PCW, CPC or Spectrum+3 40 track discs. It's a pretty straightforward piece of kit; a disc and an instruction sheet closely covered in tiny print. On the disc there are instruction files; it's worth printing these out just for interest but after the first time you'll never need to refer to the instructions again.

---<<OO>>---

Rescue only runs on the PCW 9512, it's not required at the CPC end. From CP/M you enter "RESCUE" and after some disturbingly *different* scraping and groaning from the drive (ever noticed how the normal sound of the drive becomes somehow friendly and familiar except on an Amiga where it's always balls-breaking)... after, as I say, an odd rasp from the stepper motor Rescue presents you with A Menu:-

- A. Convert a PCW 8256/8512 (180k) autoboot disc to a PCW 9512 autoboot disc.
- B. Format a single sided (180K or 360K) disc.
- C. Copy files from a PCW 9512 disc to a single sided (180K) disc.

Starting with function B (and why not?) you will first need to format a disc for the CPC. You can't simply use one that's been formatted on the CPC because the head will lay down a wide track of "E5"s to indicate blank

areas. If you then write to it with the narrow 9512 head a stripe of E5 will be left on either side, untouched, to confuse the issue when the CPC comes to try and read it.

For that reason, it's a bad idea ever to write to a Rescue formatted disc on the CPC, for instance to erase the files. If you fill the disc, reformat it using Rescue. If you do accidentally write to the disc on a CPC, convert it to normal use and format a new one to use with Rescue.

---<(00)>---

You're given a choice of formats; two funny-wunny single sided 9512 formats that have no obvious use, plus Vendor or Data formats for the CPC.

Once you've formatted as many 180K Rescue discs as you think you need, you move on to function C. There, you get more guidance:-

Make sure you have enough formatted 40 track (PCW 8256/CPC/+3-180K) discs ready and the 80 track (PCW 9512 double or single sided 720K/360K) source disc in drive A, then type the file specification or just RETURN to abort.
A: _____

Here you can enter wild cards- anything you like but not a user number (see later.)

The other slight glitch is that if you can't remember the precise file name you have a problem; there's no way to get a DIR from inside Rescue. You have to abort the whole process and do a DIR from CP/M. This is the only real problem I've had with this program.

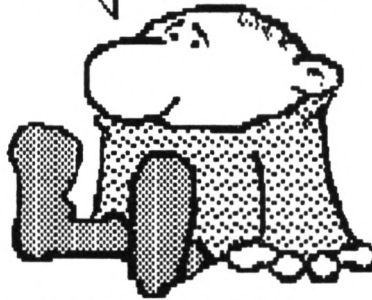
DIRECTION

I asked Ian Giles (who is Three Inch Software) why he hadn't done something about this and he explained that Rescue had started out as a utility for his own use and added, with great honesty, that adding a DIR facility would have meant a lot more work for him. Quite. At the price, it's hard to

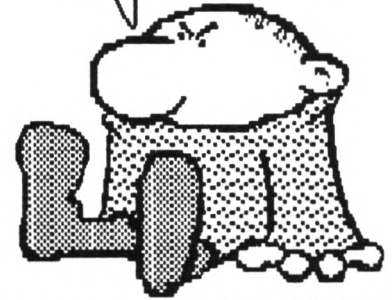
Life....

by Steve, John and Andy.

What am I doing
for a living?...



... as little as
possible, chum.



complain. And it does force me to be organised when I do my transfers so I can regard Rescue as a moral tutorial.

AND NEXT...

Anyway, onwards; when you've entered your file name for transfer you get asked for the user number by yet another menu:-

- A. Just user zero.
- B. Exclude Locoscript limbo files (just copy users 0 to 7.)
- C. All user numbers.

All very straightforward and it works as advertised. The copies are very rapid; the file is copied to the same user number that it came from. But...

There's a little trick to watch for; Rescue doesn't make .BAK files but simply writes an additional file to the disc. So if I saved this article, "RESCUE.WAC" a second time there'd be two "RESCUE.WAC"s on the disc and the CPC will only ever read the first one. I was reminded of this "feature" because I've just done it.

The solution is simple- you format the disc each time but on rare occasions, as when you've already copied another file you want to keep, that can present problems. Once the program's done, it bungs you back to the starting menu. And that's all there is to it.

BOOTS BOOTS BOOTS

As you can see from the first menu there's also function A- strictly PCW 8* to PCW 9*. Its purpose is to copy games discs that are written for the PCW but don't know about the 9512.

These often have dodgy boot sectors, not quite CP/M, that get the game running in a PCW 8000 specific way.

The problem is that the 9512 doesn't like them but there's a function in Rescue that copies the files, then fixes the boot sector so that there's a good chance that the game will run. I haven't been able to check this but I'm told that for example Bat Man can be made to run on a 9512 using Rescue.

THAT'S ALL FOLKS...

At the end of the session you go ^C (or STOP) and it dumps you straight back to A) which is a perfectly nice place to be.

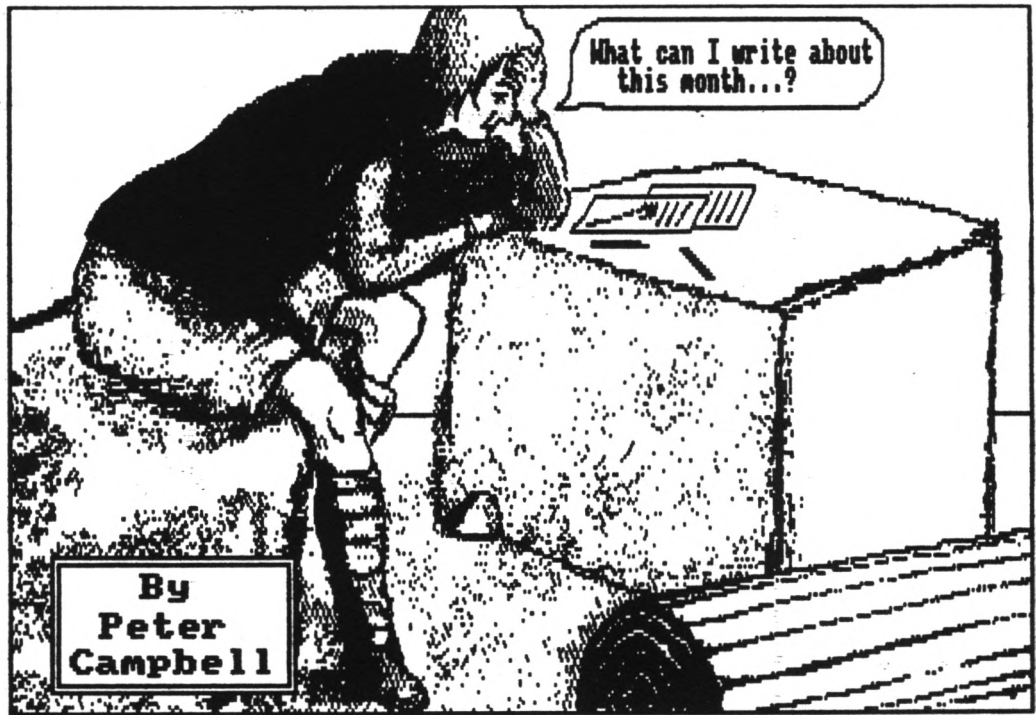
Like many really *useful* utilities Rescue improves with acquaintance. It's a bit rough on the edges but I've come to appreciate its speed and lack of fuss, which mean that I actually use it all the time.

With a 9512 at work and a CPC at home, I have a shuttle disc, Rescue formatted on one side and CPC on the other (and labelled as such on each side in HUGE LETTERS.)

It lives permanently in my pocket in a thin plastic cover, so I can just copy a file whenever the need arises.

The system has never fallen down on me; it really has made my life more civilised. Not bad, for under a fiver.

REF.



PLAY FOR TODAY

meXHEXHex

"HEX: A MODERN NIGHTMARE?"

meXHEXHex

THE CAST

PETER CAMPBELL: *A penniless bankrupt with a short fuse and an ego larger than a hot-air balloon*

MOG (not OMG) the Merciless: *The Cat*

TONY WALKER: *A Good Samaritan*

STEVE WILLIAMS: *WACCI Lord of the Manor*

THE SPECTRE COMMS PACK: *The Villain*

mexOmexOMEXOmexOmex

Scene One

A flat in Glasgow sometime, during another cold and wet November evening. As the wind howls outside, PETE sits alone and ponders the mysteries of the

universe - well... not really...

An idea bursts forth!

Instead of waiting for the GPO to deliver his FSW order why doesn't he use his Comms equipment to upload it from WACCI and then download his latest letter to "Fair comment". After all PETE has been using Prestel for months and certainly feels like an accomplished and proficient Comms expert.

Scene Two

A phone rings in a palatial mansion in London, STEVE <Who?> drops the latest copy of Playboy <What?> on the marble table and lifts the gem encrusted receiver.

PETE: Hello Steve it's that Scotch git again.

STEVE: Hi Pete.

PETE: Steve, do you think it would be possible to use Mex to transfer my order to me?

STEVE: It should be.

PETE: When suits?

STEVE: Next Friday about seven?

PETE: Fine I'll phone you then.

STEVE: Bye.

PETE: Bye.

meXHEXHex

THE NIGHTMARE BEGINS

meXHEXHex

Scene Three: Friday

In Glasgow PETE checks that the Modem (Datachat) and Spectre interface are connected properly and boots up Mex for the transfer. Time to phone STEVE.

One of the many phones in WACCI manor rings, STEVE puts down his dry Martini and picks it up. In the background JOOLZ finishes a breathtaking version of the dance of the seven veils.

STEVE: Hi

PETE: Hi Steve it's Peter, ready to go?

STEVE: Okay Dokay

Three hours later

PETE: Mex doesn't work, CPC-Mex doesn't work, 300/300 doesn't work; neither does 1200/1200 or 1200/75. We've tried Rk, Sk, Rbk, Sbk: What the hell is wrong?

STEVE: Could be the Modem, are you sure it can transmit reverse Prestel?

PETE: Well, I've looked at the instructions but they only give the barest instructions for logging onto Prestel never mind anything else. I'll phone GEC on Monday and see if they can give me any help.

STEVE: OK, bye

PETE: Bye. <<Note the Comms technical jargon here.>>

In Glasgow MOG watches amused as PETE pulls out the last of his hair and then starts chewing on his fingernails. Angry rumblings fill the room. That night sleep comes hard.

meXNEXMex

THE MAN FROM GEC...HE SAY YES!

meXNEXMex

Scene Four

Monday morning in a shabby local government office.

PETE waits for the boss to leave so he can phone GEC. The posters on the wall exhort him to "Fight the cut-backs".

Finally AYATOLLA MCPHERSON exits right. Dialling the GEC number with trepidation PETE wonders.. Is the fault with the modem? Perhaps it is only capable of operating at 1275 on Prestel? He hopes not.

GEC: Good morning; GEC.

PETE: Good morning, could you put me through to your technical section please?

GEC: Please hold on and I'll put your call through.

PETE: Thank you.

GEC: Technical section, can I help you?

PETE: I hope so, I've been trying to use your Datachat modem and the CPM Comms software Mex to transfer files from London to Glasgow but so far without any success. Is the Datachat capable of operating reverse Prestel?

GEC: Yes certainly, just change the setting of the button marked TX/RX.

PETE: I've done that but it doesn't seem to make any difference.

GEC: Your problem may be in the software that you're using, but I can assure you that the datachat will quite happily transmit/receive at 1275 & 7512.

PETE: Thanks very much, that's all I wanted to know, goodbye.

GEC: Goodbye.

PETE beams with satisfaction. At least the hardware isn't at fault.

He expresses himself with deep reserve. "Thank f**k".

<<What does that mean? -Joolz>>

Scene Five

Monday night and PETE is on the blower to STEVE again.

PETE: Hi Steve, I contacted GEC today and the modem will transmit at 7512. The chap from GEC thinks it's a software problem of some kind, do you fancy trying again?

STEVE: OK.

One full HOUR later.

PETE: I think it's time we called it a day Steve, I'm going to dig through the Mex manual again and see if I can come up with anything, I have a feeling that we're missing something very simple.

STEVE: Fine, get back to me as soon as poss. Bye.

PETE: OK, bye. <<Note the technical jargon again.>>

Having no fingernails left to chew PETE paces up and down the carpet with MEX.DOC in his hands.

[Mutters] "Sick fed up to the back teeth with this crap... Was this stuff actually written by a human being!?" [Theatre audience breaks into spontaneous applause.]

MOG looks up and decides it's time to hide. There's only one thing left

for PETE to do; check the helplines and see if anyone can help. Fingering through the latest copy of WACCI he spies someone, in fact the only one, who lists Comms as a speciality; TONY WALKER. Fingers fly on the phone.

PETE: Hello can I speak to Tony Walker please.

TONY: Speaking.

PETE: Hi Tony, this is Peter Campbell. I see that you mention Comms in your helpline notice and I really could use some help with Mex.

TONY: Sure, what setup are you using?

PETE: 6128, Datachat modem and Spectre interface.

TONY: So what exactly are you trying to do?

PETE: Well I'm trying to transfer files from Steve in London using Mex.

TONY: What version are you using?

PETE: I've tried both the versions from the club; standard Mex and CPC-Mex.

TONY: That's your problem in one; the Spectre interface is a non-standard RS232. You'll need the tweaked version of Mex. What I'll do is send you up a disc with the correct version and hopefully you'll be able to transfer files as soon as you get it.

PETE: Thanks very much Tony I'd really appreciate that. When the disc arrives I'll give you a ring if I've any problems.

PETE puts the phone down and stares at the wall for a long long time. Then the air goes blue, the floor trembles, the walls shake and plaster falls from the ceiling - PETE dances with rage.

[Shouts] "Non standard? AARGH! The designer of that interface... of dubious parentage....lower than an Amoebas bum! "

MOG wakes up and decides it's time that he left the loony to his own devices. He crawls under the hall stairs to his favourite hiding place in an old cardboard box.

Upstairs the dancing and character descriptions continue for hours.

Scene Six: Two days later

PETE returns from work. He pushes his trusty, rusty bike into the hall; lying on the floor is a package.

Opening it with the kind of feverish excitement he usually reserves for his girlfriend he finds a disc and a letter from TONY WALKER.

PETE bounds up the stairs, kicks open the door of the bedroom and whips the dustcovers from ARNOLD. Sweat drips from his forehead as he types :CPM.

The MEX legend appears:-

```
BAUD RATE IS NOW :710 BPS
MEX (MODEM EXECUTIVE) V1.14
Clone level 1
(for aid, type HELP OR "?")
Copyright (C) 1984, 1985.
```

```
by Nightowl Software, Inc
Amstrad CPC with Spectre Comm pack
Version 0.4A
[MEX]AO>>
```

MOG stalks into the room with his latest offering, another mouse.

PETE eyes the late rodent but decides to postpone dinner.

[Mutters triumphantly] "Ha! Looks like we've got the bugger this time MOG "

neXEXMex

LET YOUR FINGERS DO THE WALKING

neXEXMex

Scene Seven

The phone rings at WACCI Inc.

PETE: Steve I contacted Tony Walker a few days ago and he told me that the problem lies with the Spectre interface and not with the software. He's sent me up a version of MEX tailored for the interface. Unfortunately I won't be able to transmit to you but I should be able to receive ok. Fancy trying again?

STEVE: Ahh, so that's what the problem was, yeah sure, are you ready to try now?

PETE: Yep.

In London STEVE boots-up Mex and sends a carrier tone. In Glasgow PETE enters terminal mode by pressing the letter "T". For the very first time, characters generated by STEVE's computer appear on PETE's screen.

Spontaneous applause bursts forth in the Campbell home. MOG watches with interest; many things he has seen but never a man clapping at a terminal.

PETE then re-enters Command mode and types "RBK *.*" (*Receive batch mode, Y-Modem protocol.*) On screen the display changes to show:

```
Batch-receive ready
Awaiting file name
AO:GRAPHO.BAS
CRC MODE
```

and, after a time...

```
Recieved nn
AO:GRAPHO.BAS Transferred
Awaiting file name
```

PETE smiles for the first time in three weeks, it feels soooo good.

MOG purrs happily and a chorus of unseen angels begin to sing the praises of MEX.

Moving over to the stereo PETE selects a piece of mood music to relax to and soon the Dead Kennedys masterpiece "Kill the Poor" completes the mood of contented bliss.

After about 25 minutes (this is a long scene) ARNOLD beeps twice. The display now reads:-

```
[TRANSFER COMPLETED]
[MEX] AO>>
```

PETE lifts the phone and switches off the modem. He is back in voice mode with Steve.

STEVE: Have you got everything?

PETE: Yes, I've just run a directory and it looks like all the files have been transferred.

STEVE: Brilliant!

PETE: That's exactly how I feel too. I'll start looking at the programs and see if they've been worth the wait. Thanks Steve, bye.

STEVE: No prob. Bye

PETE peers at the Directory.

[Mutters] "Grapho..mmm...I think I'll try this one first."

Two minutes later

[Screams] "MY EYES, MY EYES!"

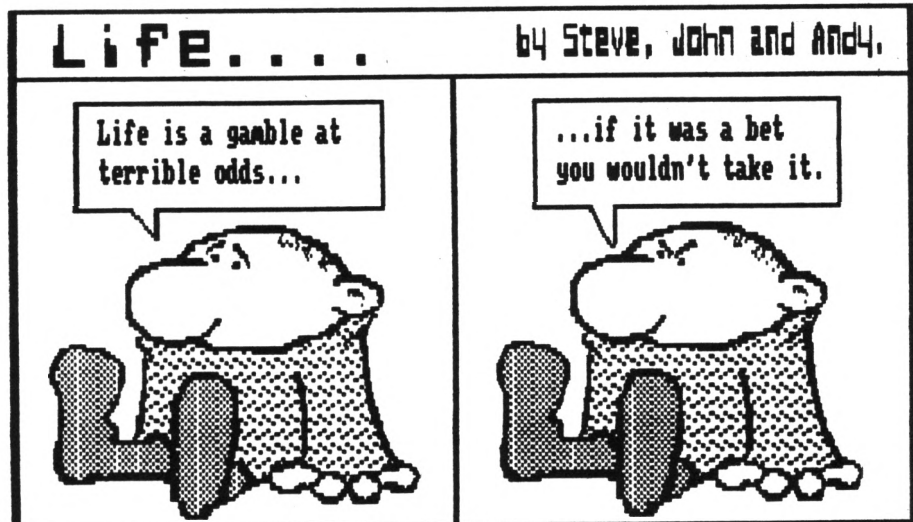
Cue Triffids stage right....

mexOmexOmEXOmexOmex

Coming to this theatre soon:-

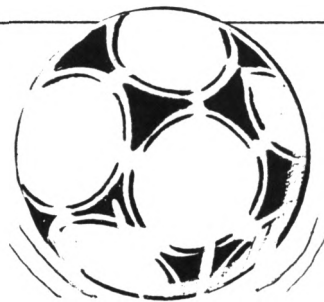
The Nightmare Continues
THE PHONE BILL

mexOmexOmEXOmexOmex



Match of the day

SIMSPOT



SIMSPOT
55 GREENBANK ROAD
DARLINGTON, DL3 6EN

Simulations old and new, KEN WALKER reviews them for you. (Wordsworth)

UNCLE KENNY LACES UP HIS BOVVER BOOTS FOR THE LAST TIME

To the best of my knowledge, there have been 36 football games in the relatively brief history of Amstrad, which spans around seven years. Most were timed to appear at the height of the soccer season when public interest was high, or prior to the World Cup when fanatics need a 'fix' after yet another England failure and most of them were terrible.

HERE WE GO...

The advent of another World Cup extravaganza has once again brought a deluge that promises a feast of footballing skill for the Amster, but I see no reason to have any more confidence in the big companies than before. They were responsible for some of the biggest rip-offs, of which 'World Cup Carnival' (US Gold 1986) was the biggest of them all. So can we ever trust the games publishers again?

GETTING ON TARGET

Football action on the micro can offer two modes of view. There is the traditional sideways view but more recently a number of games have adopted the overhead technique.

Personally I prefer watching the game from a spectator viewpoint, although there are many who believe that passing can be more accurate under the last method. Games from Microprose, Anco and Codemasters operate with an overhead view and all were highly rated by the critics during the past year.

A QUESTION OF...

Another one to be given a high score came from Audiogenic, which received an endorsement from Emyln Hughes and is simply called 'International Soccer'. The game actually plays better than Emyln ever did and without question beats the maestro's performance on a well known TV quiz show. It seems strange that such a good game as this should carry the name of a celebrity from the past, as I doubt whether his name would have sold any more copies.

What puts this game ahead of its rivals is the superb animation, variety of options and quick responsive gameplay. Not only do you get the best in arcade soccer action (the demo was more entertaining than the average Big Match) but there is also a strong element of managerial skill required.

PLAY THE GAME

Before play can start the side needs to be picked from the Edit Teams section and form can be acquired from a series of arranged friendlies.

All players have skill factors to account for speed, defence and attacking skills which can be changed to suit your play. Fitness levels can fall dramatically during a match if the player suffers a few crunching tackles from, say, the Italians or Argentinians. Your competition can be in either Cup, League or both in a season, with save/load facility to

keep tabs on teams and progress. The match itself requires the player to perfect the skills of the backheel, sliding tackle and banana shots- to be a superstar you will also need to control the power, height and direction of the shot.

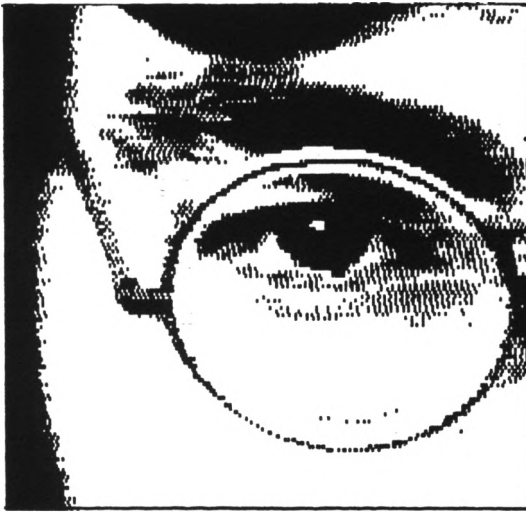
Since there is a vast range of skill levels, winning is easy at the practice level, reaching Brazilian status at the highest.

Control is by joystick and fire button which wasn't easy for me at first, trying to switch between players and missing a vital shot or tackle. With more experience you get better at pin-point passing, spectacular shooting and crunching tackle and you begin to feel like Maradona.

By the time you read this, England should already be out of the World Cup, so this game could be your only hope for a worthwhile piece of soccer action.

ANOTHER MATCH

If a tenner seems too much to pay, the best of the budget offerings comes from Codemasters at £2.99. '4 Soccer Simulators' may have less options than Emyln, but the action can be just as exciting and there is plenty of variety - full game, 5-a-side, street game or soccer skills. The game also includes a unique action replay feature, but does not have comments from Jimmy Hill. *Thank heaven for small mercies.* **BYE!** - Ien.



Glenn at Large

THIS MONTH GLENN CAREY GOES STATESIDE

It would, I admit, be untrue to say that this month's At Large was written from the USA. In fact it was scribbled down during a boring train journey to London. But all the trivia featured is from America and, as ever, completely true. Hang on a minute, I think there's an announcement...

00000000

"Ladies and Gentleman, your attention please. We would like to welcome you to the 0936 from Penzance to London Paddington and remind you that the buffet car is now open... serving hot and cold snacks, plus alcoholic and non-alcoholic beverages. Full mortgage facilities are available for anyone interested in buying a toasted sandwich and ask Keith about our Sausage Roll time-share offer... As always The buffet car is situated at the furthest possible point from where you are sitting, Thank you."

Right then, if that's all the interruptions done with, perhaps we can get on with...

TRIVIA PURSUIT

Let's take a look at trivia - USA style and in particular, their great bank robbery failures. There's been an awful lot of them, from the man who wrote his hold-up note on the back of his telephone bill to the robber who accidentally revealed his account

number. All the following stories have been published in American newspapers.

DIGIT(AL) ALARM

In Texas a bank robber was so nervous, while holding up a bank, that he accidentally shot off his own finger before getting away with his loot.

The police found the severed digit on the floor of the bank and took a fingerprint from it, eventually tracing the criminal. The headline on that story was, obviously enough... "FINGER POINTS TO SUSPECT."

SSSHHHH!

A 1969 robbery in Portland, Oregon, went wrong when the would-be Ronald Biggs character attempted to conduct the whole thing in writing.

He scribbled:- 'This is a hold up. Put the money in a paper bag please'. The teller scribbled a reply on the other side of the paper and handed it back to him. It read:- 'Sorry, I haven't got a paper bag.'

NOT SO POLITE

Sometimes not having good manners can end a "bank job." In New York, where crooks aren't quite so polite, a man walked into a Syracuse bank with a sawn-off shotgun and demanded a \$1 million. All went well until he pushed his way to the front of the queue. An offended customer punched him to the ground and then sat on him.

MAKE 'EM LAUGH

A Dorwell woman dressed up as a clown to rob \$70,000 from a local bank. A brilliant idea, you may think. After all, no-one would recognise her in that costume. However, her downfall came when she tried to get away. That's the difficult part. Especially if you're dressed as a clown.

BLIND DATE

In New York, twenty-five year old David Monserelli, got a twelve year suspended sentence after his brave attempt at a bank robbery. He was blind and was armed only by his cane. When he heard police sirens he panicked and ran straight into a door.

REVENGE

At the same time in New York a robber was doing exceptionally well, he'd held up thirty one banks before being caught. On the most wanted list, he only robbed banks in midtown Manhattan and then only certain branches. Police found that the person was a disgruntled ex-employee, sacked because of his "lack of intelligence."

The reason for only robbing midtown branches was that he was holding down an honest job at the time and did the raids during his lunch breaks.

OUTRO

I'll catch you next month - if I'm off this train by then. Take care, Glenn.

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.

CPH-001: BINCALC 10K - <i>On-screen calculator.</i>	CPH-039: WRDCOUNT 26K - <i>Another word-counter.</i>
CPH-002: COMPARE 10K - <i>Compares two files for differences.</i>	CPH-040: ADVENT 101K - <i>Big text-only adventure.</i>
CPH-003: LOOK 12K - <i>Views and Edits ascii and binary files.</i>	CPH-041: TEAN-GEN 22K - <i>Scoresheet generator.</i>
CPH-004: NDDT 11K - <i>Improved version of DDT.</i>	CPH-042: USERFUNC 12K - <i>A small library of Basic DEF FNs.</i>
CPH-005: NSWP 37K - <i>Disc and file management utility.</i>	CPH-043: BIO 14K - <i>Biorhythm chart generator.</i>
CPH-006: QK20 10K - <i>Assigns character strings to keys.</i>	CPH-044: CAL 6K - <i>Calendar generator.</i>
CPH-007: RASHB 17K - <i>Z80 reverse assembler.</i>	CPH-045: CHESS 26K - <i>CP/M 2.2 version of the board game.</i>
CPH-008: UNERA 2K - <i>Unerases erased files.</i>	CPH-046: GOLF 26K - <i>A text-only swipe round the golf course.</i>
CPH-009: XIZI 22K - <i>8080 to Z80 to 8080 code translator.</i>	CPH-047: HAZE 3K - <i>Haze generator.</i>
CPH-010: ZHAC+ZLINK ... 40K - <i>Z80 assembler and linker.</i>	CPH-048: NEWPUZ 25K - <i>Wordsearch generator.</i>
CPH-011: CONV2 3K - <i>Converts CP/M 2.2 files to CP/M Plus.</i>	CPH-049: OTHELLO 22K - <i>Version of the board game.</i>
CPH-012: LASH 10K - <i>Improved version of ASH.</i>	CPH-050: UKM7 26K - <i>Comms utility adapted from NODEM7.</i>
CPH-013: LOHD 2K - <i>Improved version of LOAD.</i>	CPH-051: IMVENT 35K - <i>Inventory database.</i>
CPH-014: Z80ASH 15K - <i>Z80 assembler.</i>	CPH-052: VDE 76K - <i>Fast, powerful word processor.</i>
CPH-015: Z8E 190K - <i>Z80 debugging monitor and assembler.</i>	CPH-053: SPELL 33K - <i>Spelling checker with dictionary.</i>
CPH-016: ZDEBUG 31K - <i>Non-symbolic Z80 debugging tool.</i>	CPH-054: SCRIVENER ... 194K - <i>Relational spreadsheet/database.</i>
CPH-017: SHALL-C 157K - <i>Floating-point version of the language.</i>	CPH-055: JRT PASCAL .. 208K - <i>Floating-point, standard version.</i>
CPH-018: SCI 59K - <i>Small-C-Interpreter.</i>	CPH-056: JRT MANUAL .. 200K - <i>Manual on disc for the above language.</i>
CPH-019: EBASIC 84K - <i>Compiles a subset of Basic to m/code.</i>	CPH-057: COBOL 97K - <i>NPS Micro-Cobol v2.1.</i>
CPH-020: LISP 81K - <i>The essence of a Lisp interpreter.</i>	CPH-058: FORTH 54K - <i>16K version, can be enlarged easily.</i>
CPH-021: EPRO 37K - <i>A version of the Prolog language.</i>	CPH-059: STOIC 62K - <i>A version of the language.</i>
CPH-022: CHEK 5K - <i>Checks disc quality.</i>	CPH-060: EXPERT86 52K - <i>A very good expert system.</i>
CPH-023: D 4K - <i>Directory utility.</i>	CPH-061: HEX 141K - <i>Nodem EXecutive comms utility.</i>
CPH-024: DISKDOC 11K - <i>Disc doctor (not sure how it works).</i>	CPH-062: KERNIT 28K - <i>Comms utility for little green frogs</i>
CPH-025: DISPLAY 5K - <i>Displays text files f/wards or b/wards.</i>	CPH-063: LUCKY13 11K - <i>Lottery number generator and checker</i>
CPH-026: ED.DOC 22K - <i>Instruction file for ED.COM</i>	CPH-064: LOGAN 15K - <i>LOGIC ANalyser and frequency counter</i>
CPH-027: FORN3 3K - <i>Allows CP/M+ owners to read PCW discs.</i>	CPH-065: WSCLEAN 4K - <i>Clears the high bits from text files</i>
CPH-028: GREP 13K - <i>Emulates the UNIX grep command.</i>	CPH-066: OPT 21K - <i>A Three Pass Optimiser for Small C</i>
CPH-029: LOOKAT 3K - <i>Dumps files in ascii format.</i>	CPH-067: STARTREX 11K - <i>Scotty's in there again.</i>
CPH-030: RPIP 8K - <i>Improved version of PIP.</i>	CPH-068: HEXTO 18K - <i>Make DATA loaders from HEX files</i>
CPH-031: SD 4K - <i>Directory utility.</i>	CPH-069: HAXELCAT 57K - <i>Print out a catalogue of all your files</i>
CPH-032: SETCOLOUR 12K - <i>CP/M 2.2 easy colour-change command.</i>	CPH-070: HAKEASH 17K - <i>Converts ZHAC files to source for JRTASH</i>
CPH-033: SORT 4K - <i>Sorts the contents of text files.</i>	CPH-071: 80TRK 59K - <i>Stick a 5.25" drive on your CPC</i>
CPH-034: VLIST 2K - <i>Controls text file scrolling speed.</i>	CPH-072: ZSH 24K - <i>PD assembler</i>
CPH-035: WCOUNT 7K - <i>Counts the words in text files.</i>	CPH-073: DISZ80 22K - <i>Z80 op-codes into Zylog, 696 mnemonics</i>
CPH-036: LBRDISK 16K - <i>A library utility.</i>	CPH-074: CPM2TO3 7K - <i>Run 2.2 programs under CP/M Plus</i>
CPH-037: DU 44K - <i>Powerful disc sector editor.</i>	CPH-075: XRAS 160K - <i>Scrolling bulletin board host program</i>
CPH-038: NULU15 82K - <i>Improved version of Library Utility (LU).</i>	CPH-076: NPT 3K - <i>Easy one-drive Multi File Transfer.</i>

CPH-077: CRUNCH/UNCR .. 17K - <i>User-friendly file squeezer.</i>	CPH-097: EDIT 16K - <i>A text editor.</i>
CPH-078: SIDEWAYS 34K - <i>Prints spreadsheets sideways.</i>	CPH-098: FINSY 40K - <i>Cardbox filer program.</i>
CPH-079: DISCKITA 31K - <i>General purpose disk formatter +</i>	CPH-099: SHELL 7K - <i>CP/M menu driven environment.</i>
CPH-080: CLEANUP 3K - <i>Slicker file erasing and typing.</i>	CPH-100: BDO4 6K - <i>Checks discs for bad sectors and files.</i>
CPH-081: SUPERZAP 27K - <i>A full screen interactive disc utility</i>	CPH-101: ALLDIR 1K - <i>(2.2) All User Area DIRs.</i>
CPH-082: PASSWORD 3K - <i>Protect your programs from prying eyes</i>	CPH-102: UDIR 1K - <i>CP/M+ All User Area DIRs.</i>
CPH-083: SCRAMBLE 2K - <i>Similar to PASSWORD but trickier.</i>	CPH-103: VIEW 6K - <i>Prints ANY file to the screen.</i>
CPH-084: DISPLAY 5K - <i>A smart text reader.</i>	CPH-104: OSB2ANS 6K - <i>Run Osbourne CP/M programs on the CPC.</i>
CPH-085: FILECHOP 6K - <i>Breaks down ANY program.</i>	CPH-105: ANDYBASE..... 56K - <i>Powerful database program.</i>
CPH-086: LIST 3K - <i>Improve the appearance of listings.</i>	CPH-106: VDE266 161K - <i>The ultimate version of CPH-052</i>
CPH-087: MAKE 3K - <i>Simplifies area user changes.</i>	CPH-107: XOX 9K - <i>Pascal version of noughts and crosses.</i>
CPH-088: NEWCCP 9K - <i>Adds extra commands to CP/M.</i>	CPH-108: RDMS 55K - <i>Read MS-DOS files.</i>
CPH-089: PCW 3K - <i>Read AND write to PCW formatted discs.</i>	CPH-109: UNERA 6K - <i>Recover erased files.</i>
CPH-090: EPSETUP 11K - <i>Configuration program for Epson printers</i>	CPH-110: STATUS 12K - <i>Displays the current status of your CPC.</i>
CPH-091: B29 47K - <i>MSWP workalike, views COM files as well.</i>	CPH-111: PACNAM 24K - <i>CP/M version of the arcade game.</i>
CPH-092: HPT+ 3K - <i>Multi File Transfer with two drives.</i>	CPH-112: MAKEBATCH 4K - <i>Easy creation of submit files.</i>
CPH-093: PRINT 7K - <i>Text file printing aid.</i>	CPH-113: ANDYBASE 56K - <i>Powerful databse.</i>
CPH-094: RESCUE 6K - <i>rescues corrupted discs</i>	CPH-114: TORNAO 15K - <i>Graphics, colour and sound under CP/M2.2</i>
CPH-095: CRCBUILD 3K - <i>Catalogue your discs. (CP/M 2.2)</i>	CPH-115: CLS 1K - <i>Clear screen under CP/M.</i>
CPH-096: HCAT 23K - <i>Catalogue your discs. (CP/M +)</i>	CPH-116: INSTALL.VDE ...11K - <i>A guide to installing VDE on the CPC.</i>

LOOSE HOMEGROWN STUFF - Copying charge = 4p per K

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

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

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

COMING TO A CPC NEAR YOU SOON!

YES IT'S...

AUNTIE JOHN'S CONCEPT DISC

(Oohs, ahhs and finally... Gasps!)

C THE
o
n And
t s H
e t y
n p e...)

GREEN'S STRIP PONTOON

Embarrassingly awful digitised pictures of Green taking his clothes off, if you play your cards right.

DRIPTZONE PLUS

An enhanced version of Dripzone, with 54 possible sheets, digitised pictures, digitised sound, and little twinkly things. Oh yes, it's not Cyan anymore either.

ENGLEBERT

A version of an arcade game that was quite popular some time ago.

SAUCER ATTACK

Basically a machine code shoot things game. But do you feel fulfilled?

THREE DIMENSIONAL MAZE

Totally un-original, but damn fast 3D maze program. Where would we be without logical colours, eh?

BEETLEMANIA

Pure machine code highly graphical game, with ducks and trees and things.

GLOBE

Graphical view of the Earth from any point in Space. (Converted from a BBC computer program, so it must be good).

JUGGLE

Want to learn to juggle? This won't help.

NB: The first two programs mean that the disc will really only run on 128K disc-based machines.

THE "PICK-A-DISC" PAGE

THE WACCI CP/M PD DISCS

CP/M DISC 1

Z80 AND 8080 assemblers, Z80 to 8080 to Z80 code translator, debugging monitor and assembler, reverse assembler, binary file comparer, plus NewsWeeP and more.

CP/M DISC 2

Small-C (floating-point), Small-C interpreter, Prolog, Lisp, EBasic plus NewsWeeP.

CP/M DISC 3

Library utilities, disc quality checker, Unix grep command, PCW disc reader, disc sector editor, text file sorter, word counter, MFT, plus NewsWeeP and more.

CP/M DISC 4

Cave adventure, chess, othello, golf, word search, biorhythms, maze generator, On-screen Calculator, Prolog, Comms utility, plus NewsWeeP and more.

CP/M DISC 5

Scrivener (spreadsheet, inventory database with macros, VDE text editor, spell checker with dictionary, sorter, word counter, comms utility, plus NewsWeeP and more.

CP/M DISCS 6 and 7

JRT Pascal, Sci, Cobol, EBasic, VDE text editor, plus NewsWeeP.

CP/M DISC 8

Expert86, Forth (16K version), Stoic, Cobol, VDE text editor, plus NewsWeeP

CP/M Disc 9

Nex, Kernit, Kernode, Easymex, D, Hmoden7, NewsWeeP, XNCPC2, KDSNex, CircitNex, NIO-SN14.

CP/M Disc 10

Andybase, VDE266, Sideways, Print, Edit, Filer, New CCP and NewsWeeP.

THE WACCI HOMEGROWN CPC DISCS

WACCI DISC 1

Masters of Midworld, Minimon, Chardes, Header reader, Fruitworm, Othello, Four in a row, The World, Chat, Jigsaw-1, Eddy, XOX, Pontoon, Progdoc, Helping hand, Bomber, Life, Lock'n'key, Tunnel dive, Head, Memdata+, Keydef, Darts, Grid warrior, Jigsaw-2, Star chase, UFO escape.

WACCI DISC 2

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

WACCI DISC 3

Bouncer, Basic plus, Label printer, Missile, S&P, Synth, Hotrods, Breakout, Depro, Dis, Pairs, XRef, Wacmon, Music composer, Logopolis, Maths magic, Breaker, Disc menagerie, Nosey, Sprites, Squeezer, Caverns of Skeletor, Zener cards, Sum-vaders, Astrosuite, T&P, Wordy.

WACCI DISC 4

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

WACCI DISC 5

Graphic magic, Jigsaw-3, SDN, Write it right, Banner, DYS-SYMN2, Sheepdog, Monopoly, Backgammon, Music, Orrery, Dominoes, Globe II, Printer, Envelope, Poster, Contours, Complex, Diabolo, and ADAM.

WACCI DISC 6

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

WACCI DISC 7

WACCIWord, Romread, LNA SDump4, Convert, EZMusic, Keyboard, SPX, Grafplot, Hardcat, AGE128, Bank+, DCheat, PCheat, 3DXOX, Invoicer, Pacplant, Typing tutor,, Strobe, Magic squares, Wild, Decomp.

WACCI DISC 8

The Kirk editor, Football Pools predictor, Dwerrybase.

WACCI DISC 9

Chess, Mode, Display, Organise, Display, Read, Grapho, MFile, Tandy, Edbutt, Tidy, FSWform, Inlays, NPC, Invaders, WACCISpell

WACCI DISC 10

ASCII-to-Mini Office II, Fruitrun, XWORD, MCPgraph, Xdraw, X1, X2, X3, Keycard, Loot, Cassdisc.DR, Example1, Frame, General.DR, PCBdraft, Progdoc4.

WACCI DISC 11

Display2, 120D, Biglabel, Cauto, CGP115, Popt120D, Wacciword3, WAR.

WACCI DISC 12 (N/A)

HEX to BAS, Hextobin, HP, OHM, OSKD, RESID, Draughts, Example2

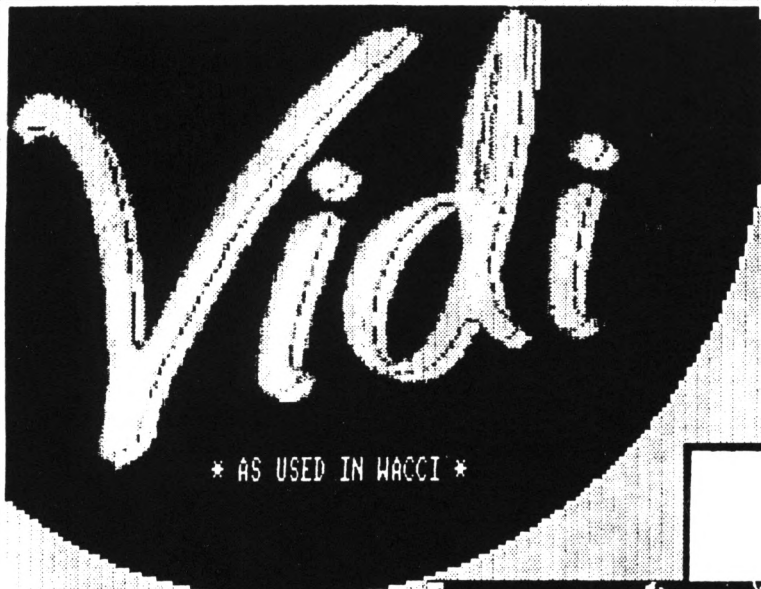
Aj's CONCEPT DISC

Green's strip pontoon (128K), Dripzone plus (128k), Englebert, Saucer attack, Three dimensional maze, Beetlemania, Globe, Juggle.

Aj's TWILIGHT ZONE

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