WACCI

THERE IS NOT MUSHROOM

INSIDE FOR ANY

WAFFLE THIS ISSUE

CONTENTS

THE BENEFITS OF WACCI MEMBERSHIP

* The best magazine for serious CPC users.
* An INDEX of the above from issue 1 - 81.
* Telephone HELPLINE (indispensable).
* Bargain buys/wanted lists from the MARKET STALL.
* Discount off goods from advertisers.
* List of PD discs, tapes, library books, services.
* Above all the advice, assistance and friendship
  from other WACCI members.

BENEFIT list by Ernie Ruddick, December 1994

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PRODUCTION METHOD

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their spare time. (Isn't mail merging just great.)

WACCI: The club for Amstrad CPC computer owners.

FRONT COVER: by Russell Macdonald/Paul Dwerryhouse

THE TELEPHONE HELP-LINE

BOB MOFFATT, (0994) 453509, Pendine, Carmarthen.
Masterfile III, Mastercalc, Qualitas & Protext.

STEWART PEPPIATT, (0245) 353903, Chelmsford, Basic
M/Code, DMP2000, VDE, Scrivener & general problems

PETER CAMPBELL, (041) 554 4735, Glasgow, OCP Art
Studio, Vidi, Basic, MicroDesign & Art Programs,
ProPrint, CPC plus m/cs and VideoMaster.

FRANK FROST, (0983) 882197, Isle of Wight
4pm to 10pm, VDE, CP/M and Protext.

IAN NEILL, 01926 337708, 6pm to 10pm, Warwickshire
Eprom blowing, Hardware, Electronics and more.

MARK STEWART, (0773) 822599, Belper, 8pm to 10pm,
PAW Adventure Creator, Basic and general help.

LAURENCE SAUNDERS, Herts, (Work) 061 480 4900
Maplins & technical help. Now at Stockport.

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

MIKE LYONS, (0942) 59942, Wigan, Basic, Stop Press
Dk,tronics Speech Synth, Rodos and general help.

STUART GASCOIGNE, (0272) 831361, Bristol, Basic,
Machine code, PD Discs 19 to 36.

JOHN HUDSON, (01484) 423252, Huddersfield. MOII,
CP/M, Wordstar/Newword, dBASE, CP/M PD, CPC-PCW-PC

JOHN BOWLEY, (0733) 260616, Peterborough.
Help and advice about the Book Library.

CHRIS GREEN, <<*has gone missing, does any member
know of either his whereabouts or his current
circumstances, or both. Thanks -Paul.*>>

NIGEL CALLCUTT, (0664) 68738, Melton Mowbray.
Technical advice, hardware and CPC repairs.

RICHARD AVERY, Tasword 464, GPaint, Another World.
35 Marlborough View, Cove, Farnborough, GU14 9YA

VACANT HELP-LINE PLACES

Two spaces are currently available on the list so
write with your details to WACCI HQ if you feel
you could help your fellow club members.

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

THANX
&
STUFF

The COLD
Editor

I'd better start off by correcting my mistake of last issue - fancy welcoming you to the first edition of 1994. How is it that you need to print a few hundred copies before you notice it? Oh well, on with this months round of mistooks.

In order to combat misttoks, that very helpfull chap Frank Neatherway, is now checking as many pages as I can send him before printers deadline. I don't think he is indexing the mistakes.

A STATEMENT FROM ANGIE
Dear Members, Well it's time for decisions, we've been talking about holding a convention for some time now so I decided it's time to do something about it. So I have. We can have a convention, I've found some conference facilities just off the Motorway M6 at Bescot Football Stadium (Walsall FC.) It's a very attractive venue with ample parking. We can have it on a Sunday for £200 for two rooms and a small room for smokers. *<<What about the bar? -Paul>>*

There is a Restaurant and I can book Sunday lunch for £4.95 and there are Hotels available locally and I would be happy to book accommodation for any members who wish.

They have a huge Sunday Market on the site so there would be something else of interest. I will organise it IF YOU WANT but it's down to you to say so. SO PLEASE, DO YOU WANT IT. I'm thinking in terms of September 1995. Come on friends let's do it. The price of tickets will depend on how many of you want to come. I've written to all the suppliers I can think of to ask

them to take a stall, also the PD Groups. So the decision rests with you. Angie.

IT'S NOW OR NEVER
So there you have have. Angie has taken the bull by the horns and done everything but book the halls. We need your support before we commit money.

Once we have determined the likely attendance, the cost will determined and tickets printed. You must book your tickets NOW and that means by the copy date for the next issue. You have until 16 February to let Angie know. Failure to achieve a minimum will result in the convention being abandoned, probably forever!

OH DEAR DISCS
Peter Campbell has obtained a limited supply of Maxell discs. These cost £25.00 (ouch!) for 10. Also available are a very limited supply of original Amsoft discs at the same price. Only 10 discs per members please. Whilst this may sound very dear, the only other suppliers of Maxell discs WACCI can find want £40 per 10 so if you want the real McCoy, you must pay up.

PD DISC PRICES
It appears I may have confused one or two of you regarding disc prices. Three inch PD discs are £3.00 to buy

and £1.00 to borrow. The cost of a 3.5 inch disc to buy is also £1.00 and I hope that clears things up. Whilst on PD discs, a new disc, PD 101, is available containing the Protext Demo and Rambase Four.

BOX CLEVER WITH SD
Stephen Denson, of SD Microsytems, have written confirming WACCI members still qualify for a 10% discount on their range of software and supplies. The only change coming is in their 3.5 disc drive. Previously postage was free but due to increased cost SD can no longer offer this. However, the unit cost of £79.95 remains the same with £5.00 added for P&P.

SD are offering two new products, a fancy/picture label printer called SUPER LABELLED (£12.50) and a 3 inch DRIVE REVIVER KIT (new belt, cleaner, instructions - £10.00) and WACCI would be very happy to review these new products if you care to let us have sight of them Stephen. SD always use PO BOX 24 in their address but this number is unique to the town/area they reside in. PO BOX 24 won't find SD unless you put: SD Microsystems, PO BOX 24, Attleborough, Norfolk NR17 1HL which, of course, is their address. You can telephone or even fax SD on: 01953 483750.
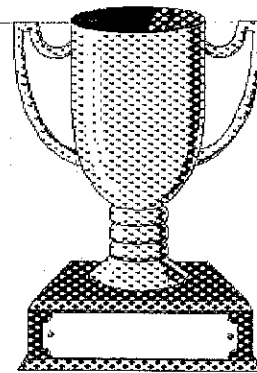
A CENTURY FOR IAN BUT NO PRIZE
The first member to extend his/hers membership to the magic 100 is Ian Parker (37-54), well done Ian. *Paul.*

COMPETITION SPOT

WITH JOHN BOWLEY

YES I'M BACK – *What did you get for Christmas? My Wife Carol gave me Pardados for Christmas and I can whole heartily recommend it to you all it's superb. Now that things are back to normal (famous last words) its time to get things moving again so without any more delays here we go.* ⟨⟨John⟩⟩

SEPTEMBERS COMPETITION UPDATE
I received three more stories after I sent Paul last months competition page and I thought I'll just mention that they will also receive 2 PD Discs.

These stories will also be printed in our mag in the near future.

DISC SHORTAGE
You're aware by now that there is a shortage of 3" discs. If you've got a 3.5 disc drive how about having your PD prizes on 3.5 discs.

BOOK LIBRARY UPDATE
I've just received four books that may be of use to members and they are:

PRT19   0.47p LX-400   *User's Guide*

PRT20   0.77p LX-850   *This includes a user's and a setting up guides.*

These books were donated by our hard working PD Librarian Ian Parker.

Dave Corder has kindly donated a booklet on Amstrad Peripherals.

This booklet covers: Graphics Light Pen, Speech Synthesizer, 64k, 256k Memory Expansions, 64k, 256k Silicon disc by DK'tronics, covers all the CPC's. *The postage cost is 0.38p.*

BOOK DONATIONS
If you've any books on the CPC's or printer manuals that you no longer need or want. *Please get in touch.*
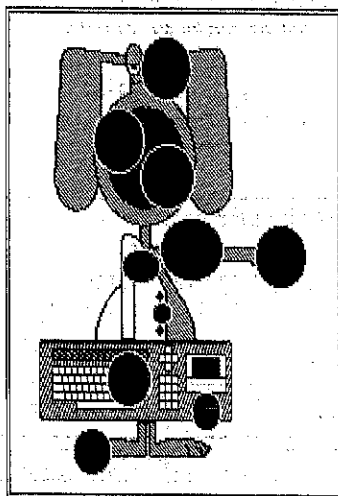
MY ADDRESS
97 Tirrington, Bretton, Peterborough, Cambs. PE3 9XT. Tele 0733 260616.
* Please telephone between 6pm - 8pm *

OCTOBER RESULTS
Did you find all the ten differences? Just have a look at the drawing below to see how you got on.

THE WINNERS
I would like to thank all those who entered this competition if you didn't win this time, *please try again.*

*   1st   –   Antoine Mangion   *

*   2nd –   Bert Jones   *

*   3rd –   P. L. Curgenven   *

NOT GOT YOUR PRIZE?
If you've not received your prizes yet please get in touch with me and I'll sort it out.

COMPETITION SPONSOR
Have you got any software that you no longer use? If so please get in touch with me.

FEBRUARY'S COMPETITION
Something a bit different this month which I hope you'll enjoy. Each clue goes to make up a name of a old T.V series. Just put the initials or letters into the appropriate box. Then send me your answer by 24th March.

1	2	3	4	5	6
S	T	R	E	E	T

7	8	9	10
H	A	W	K

1) Surname of our editor. 4th letter box 3, 7th letter box 7.

2) Children like flying them in the sky. First letter. Box 10.

3) WEST. Use all the letters and put them into boxes 1, 4, 6 and 9. But you have to decide in want order.

4) It's a drink. Use all letters in boxes 2, 5 and 8.

PRIZE ON OFFER
A choice of two prizes for you to pick from this month. You can either have 10 tapes with games on or you can have MicroDesign Extra. If you pick the tapes of games I will send you a list to choose from.

FINALLY
I would like to thank everyone for their support in 1994. I look forward to hearing from you and new members throughout 1995.

Without your support I'll just sit down and cry. That's it for this month until next month. Bye for now.

Fair Comment
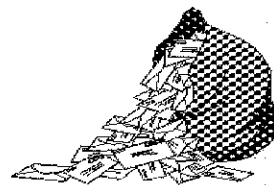
AA TIME

In reply to Angela Cook's letter about AA, I must agree with her sentiment that if we don't want to see the last "commercial" CPC magazine die we ought to support it.

When I sent off my subscription AA was written on good quality paper, there were lots of pages and they were glossy. The offer I answered said that I could have a disc instead of a tape for the cover "tape". To be fair to AA, an apology was sent saying that the disc offer could not now be made and returning my cheque. I sent my cheque back to them saying that tape would be fine.

Since then the magazine's quality and quantity of pages has plummeted and the frequency of getting them is very strange. However, with the appointment of the new editor I hope this will settle down because if it doesn't I have only a finite amount of 'spare money' and it can be spent elsewhere. Just think, WACCI has 50% more pages and only costs 50% of the price. I am aware that WACCI is run by enthusiasts and AA is fully commercial with its many bills, but there is a lesson to be learned somewhere.

Alan Tilling
Cheshire

<<Hello Alan and thanks for your views on AA. What do you think the reaction would be if I doubled the price of WACCI and halved its pages. Wow, would I be popular. Let's compare AA (and risk Angela and her wrath) to a magazine like Computer Shopper. It costs £1.75 in the high street shops but if you take out a three year subscription the price drops to £0.99 per edition. The January edition has 738 pages and a 3.5 HD cover disc. At that rate AA should cost 3p. I know that's a very unfair comparison and that advertising pays for the shopper magazine but statistics are wonderful and can prove just about anything. Now we have to ask ourselves is AA worth 3p? Sorry Angela. -Paul>>

HOARD IT

Dear Paul, thanks for arranging the loan of Protext for the humble auditor. BUT, you really like to test your hired lackeys to the utmost don't you?

I really didn't want to get deeply involved in yet another WP program (especially as I've graduated to the truly excellent Brunword ROM). So I just looked up two commands - Load and Print. After all, those should be all that I needed to produce copies of the monthly statements from your disc.

Each month's statement loaded okay but certainly wouldn't print. An error message showed up as "STATEMNT.not found. So I would have to blasted well plough through page after blasted page of the blasted manual after all.- I turned to my loyal companion - "Ah, Watson, a clue no doubt. It says here on page 33 of these dusty scrolls that the strange hieroglyphics >co and >pr on each statement suggest a template and a printer driver. I expect the template and suchlike complications that we're looking for are on the disc provided by that kind Mr Dwerryhouse who thinks of everything. Find the template and then it should be easy. Let us CAT the disc my dear fellow." Curses and more curses, no it isn't there!!!!!! What's to do?

Back to the dratted manual. Was there perhaps a way of cracking through the incomprehensible verbiage and overcoming Mr. Dwerryhouse's complicated combinations and just print out a nice straightforward statement. Back, back, back to the beginning and on again into the abyss, word by word.

A thought. Should I risk ringing the illustrious editor himself? But hist! It is not yet the witching hour and the long suffering Mrs D. might be still abed. (Sorry Mrs D. no implications there). If she should take up her shotgun as threatened there'd be no editor (boo) and I'd be sacked as auditor (hooray). Tempting but hardly fair.

So onward ever onward. What's this on page 28? Could this be IT? "A printed copy of the text with stored commands can be obtained". Promising perhaps but how to obtain it? Not quite that easy to find out about "See chapter 15". A desperate flurry of pages. Some rigmarole about "Document" and "Program" blurs before my weary eyes - it speaks of facilities and nuisances and a ruler and the eighth position. What on earth am I reading? Some Conservative MP's memoirs?

And then I see it! It shines from the page like a beacon.

> "Stored commands are printed
> and not obeyed"

Not even for She who must be obeyed? (I can't resist these literary references.) A wonderful, wonderful moment. PROG is the thing to do - the key, the final prize at last within my grasp. Adjusting my flak jacket I step gingerly into "Command Mode". My trembling fingers tap out PROG and then the Enter key. Then again PRINT. Dare I press Enter again - is there a hidden virus put in by Arnor to self destruct all printers tainted by Brunword? Has this techno-freaks' manual driven me nuts? Have I the nerves of steel required to be a WACCI auditor? Have I the looks of Indiana Jones? Probably, certainly, no and definitely not. But do it I must.

Be still my trembling heart. IT PRINTS! I have before my glazed old eyes a sheet saying clearly "WACCI MONTHLY STATEMENT" with the master's beautiful spacing and layout almost in place and only a small amount of gibberish to ignore. Oh happy day.

And that is how I learnt more than I could ever want to know about Protext. It's certainly an exciting life in today's world of auditing.

Patrick Hanlan
Cornwall

P.S. To Angela Cook. I just love Red Dwarf and I could watch it 24 hours a

day. I've never missed a repeat yet. And that goes for Hitchhiker too. I reckon it's well overdue for a rerun on the telly. And despite what I said about AA I've never missed an issue since the other one (ACU) closed down. I'll support it for as long as it goes on even if it is costing nearly 15p per page including adverts. So there.

<<Dear Patrick, oh how rotten I have been to you. Not only have I forced you to learn another WP but I left the printer driver off the disc I sent with all the financial records on.

Let me explain for all. Every single transaction is recorded on a monthly statement. This statement is very much like a bank statement and I make great use of things like decimal tabs within Protext. The file has its own printer driver, I called it STATEMNT.BIN, and that's what Patrick didn't get.

I have a definition of an auditor that I really like:

An auditor is a person that enters the battlefield, after the battle has been lost, and bayonets the wounded.

I think subconsciously I left that file off on purpose. There, I've admitted it now and I feel better, don't you just love having one up on an auditor.

Seriously, many thanks to Patrick for taking the job on. It may be fine for me to say - yep WACCI has enough funds in its bank account to pay all your subs back should WACCI fold (which will never happen) but I want to be able to prove it.

Perhaps I should say a little here about how the club is run, gosh this will bore you in the extreme.

Everything that WACCI does must make a (small) profit. That means the magazine, the PD libraries, the Alternative Firmware Guide, blank discs etc. This ensures three things:

* WACCI can purchase things like printers for production of the magazine.
* WACCI can plough surplus funds back for the benefit of the membership. The Index and Supplement are examples of this.
* Any monies used to purchase items for the club don't eat into subscription monies.

I hope Patrick will approve of the way the club is run but I'll have to wait and see on that score. It certainly will make me feel better, one way or the other, as you will know the truth. I wish WACCI to be run far more openly than it ever has been in the pass. Remember it is your club and in these Fair Comment pages you can say anything you wish about anything.

I think Angela will understand your message about AA. I wonder if we will have an AA free mag next month -Paul>>

THE LONGER THE LETTER...
Dear Paul, here is a big consignment of PD software for you. Some of it has been seen in the Homegrown Library before, but is either enhanced or better documented. All the contributions are for PD, except for the genealogical database which is to be Homegrown.

I sent all this off to Clive about a year ago, but it got lost in a cupboard for a long while, so I'm hoping that this time it can be got into circulation very quickly. Ever the optimist... Some of these progs were mis-laid when Steve Williams stopped being editor!

Firstly there is a set of programs providing ways of doing Arc-sine and Arc-cosine on the Amstrad. There are two sets of RSXs and some BASIC functions. Even if they are not of use to programmers the machine code illustrates how to access the BASIC error handler from machine code.

Next, Dir-Sort sorts your files in disc's directory into alphabetical order, so that the files appear in order with programs such as The Music System which take them in directory order and do not sort the files themselves. This was previously Homegrown, but has now been improved to work with all standard disc formats.

Sys-Data is on Homegrown disc 5. Now it is public domain. It converts System format discs to Data format while retaining the files on the disc.

Zbin is an entirely new program, for use with ZMAC, the assembler on PD disc 2. If there is space it would be good if you could squeeze it on there too. Normally ZMAC is used with ZLINK to create COM files for CP/M. ZBIN is a CP/M program which takes the place of ZLINK, and produces Amstrad Basic

binary files from ZMAC's output instead. If you can't afford MAXAM then ZMAC and ZBIN are a perfectly useable alternative. I use them for all my machine code now. Before I was using RAW - a type-in from CWTA, but waiting around twenty minutes for an assembler written in Basic to chew through my code was getting a little frustrating!

Next come a set of programs for use with Rainbird's Music System. There is a program to copy music system files from tape to disc. Ordinary copiers will not work as the Music System disc file format has some extra stuff hidden in the header. Also the program LinkSplit allows you to split up Advanced Music System linker files into the original music files it was made up of.

In response to Nigel Bacon's letter in the January issue, I have had experience of the RAM Music Machine. I do not know where you can get it now. The MIDI capabilities of the interface are perfectly good, but the software is pathetic. Another disadvantage is that it has no through connector for the expansion port, so if you wanted to use it with a disc drive on your 464, you would need a port-splitting adaptor. The Rombo ROM box comes with one, but you might be able to get a lead on its own. Having said that the Music Machine also includes sampling abilities, which can be fun. It is a good, well-built interface, and the software supplied with it is all right for very elementary stuff. Personally, I would recommend the Rainbird Music System (or Advanced Music System if you have a disc drive) if you have not got it, as even though it has no MIDI capability it is essential for the Amstrad musician. It uses proper musical notation so is far better from an educational point of view. Also, the following programs may help if you get a RAM Music Machine. I wrote them four years ago and never got round to the polishing up of the presentation, but they are quite easy to use.

AMS-MIDI and Perform allow you to play Music System files through the Music Machine's MIDI interface on an electronic keyboard or other MIDI instrument, combining the ease of editing of the Music System with the sophisticated sounds possible when you

are not limited to the Amstrad's internal sound chip. Also for Music Machine owners there is an RSX for transmitting raw MIDI data, so if you know about the inner workings of MIDI you can write your own package.

If anyone is interested, I could supply WACCI with the details of the Music System's file formats, as I had to do a thorough investigation of them to produce several of the above programs, and it would be a pity for the information to be unavailable publicly.

Finally I am offering to the homegrown library my own genealogical database. From what Andrew Solomon has said in his letter in January I would guess that his package is more versatile in terms of printed output, and I expect he is able to devote more time to updating his program. It is another case of a program that has changed little in the last four years due to lack of time. I hope I will be able to get back to some serious programming in a year or so. Anyway, my package requires 128k and a disc drive and has a capacity for over seven hundred entries. I'm afraid my family has already filled up all of this space, due to innumerable fourth cousins in Australia. Searches can be conducted for relations (eg parents, grandchildren, nephews, 4th cousins) and family trees can be printed. Dates are stored in a special three byte format complete with calculation of the day of the week (correct even before 1752). I meant to send it in one and a half years ago when there was some correspondence about this sort of thing, but it managed to get held up at Clive's house. Still, it does mean that you get a more recent, faster version. I have no idea how it compares with other packages as far as speed or features go, as I have never seen any others. Still, I find it useful and it is free and it may even be radically improved if I get time.

Regarding accessing the second side of a 3.5 inch disc under AMSDOS, it is pretty tricky. There is nothing in the XDPB to help you. It is possible though. You may have to resort to talking to the disc controller chip directly, which isn't that hard actually. The series by John Keneally which is being repeated touches on it. The XDPB under CP/M+ does cater for

double-sided discs. You can find the details an Amsoft CP/M+ technical manual for the CPC 6128 and PCW. Unfortunately it doesn't seem to be in the WACCI Library. I am using these features at present to write a CP/M program to read and write IBM discs.

Apart from long boring letters like this, WACCI is as good as ever. Sorry I haven't had time to write for ages. If anyone reading this is on the Internet, my address is m.phillips@ucl.ac.uk, should you be interested. When I have access to e-mail though, I have no access to CPCs, so I wouldn't be much good for an e-mail helpline unless it was simpler stuff. Are there any other WACCI members out there on Janet or the Internet?

All the best for the New Year to all the WACCI team. Yours,

Matthew Phillips
Nottingham

《Dear Matthew, thanks very much for the very full disc of PD and Homegrown software you sent. In the true traditions of WACCI editors I have placed the disc somewhere for safe keeping but where is it.... In fact it is safely in the hands of John Bowley to sort out for us all. John was very enthusiastic about it all and has placed the genealogical database program on Homegrown Disc 16.

Please don't order the disc yet as a small problem exists with the print routine and John (Master Disc thingy type person) is sorting it out with Matthew as I write.

I've printed Matthews letter in full so all will be aware of his splendid work for the club.

Thanks for the reply to Nigel Bacon from the January issue. I hope that was of some use Nigel, it sounded pretty good to me. The only real drawback being is how to lay your hands on the software. Oh well, this age of computers that can move eight times the data of a CPC around 25 times faster does have its disadvantages for the CPC. Wouldn't it be great if all the old proggies like the Advanced Music System could be made PD. Well it happened to Dlan. Could it happen to any more software? How about sending me a list of the software you can't buy anymore but would like to buy and, importantly, a

current address and I'll see if WACCI can obtain it as PD. There is an awful lot of software that must fall into this category so let's see what list we can come up with. -Paul》

WELL IT'S AN ANSWER
To Paul. Do I want to be placed on the free of charge list? No thanks, I'll continue as usual and buy my copies, I prefer it that way.

Have I missed something? What else, apart from paying my subscription do I need to do to be described as "taking part in the club."

You might like to ask Amstrad Action to change their records, they are still printing my name and phone number as a contact point for WACCI.

Please confirm that my name has been removed from the club's bank account details. Cheers,

Clive Bellaby
Nottingham

《Hello there Clive, great to hear from you even if it is such a short note. If you remember it was Alan Tilling who suggested you be placed on the free of charge mailing list and all that wrote in agreed. Not one word was heard against the idea but yours. Okay, I must abide by your wishes.

Sure you are supporting the club just by being a member but I for one would like to see the vast amount of CPC knowledge you have put to good use. Please come out of retirement but only as and when you choose.

I have written to Amstrad Action (hello there Karen - I know she reads WACCI) and hopefully the entry will be changed. I have also written to the bank (WACCI bank with Barclays) and asked for your name to be replaced with that of John Bowley. The form was duly sent, signed by John and myself and sent back. I can confirm that your name has been removed from the club's bank account details.

I look forward to hearing from you soon and I wish you all the best in whatever you are doing now. -Paul》

ONE VERSUS HELL
Dear Paul, Many thanks for the returned disc, received this morning. I'm pleased you think the Benefit of being a WACCI member list will be of some use. Maybe it will help new members.

I've recently received a letter from Future publishing (Amstrad Action) saying they are no longer offering subscriptions. I hope that this doesn't mean Good Bye from them.

The Epson MX80111 printer that I asked for help from members on has been condemned by the local repair man (burnt out printer driver transistors) expensive!! so I'm now in the market for a decent printer. Must get in touch with Angie and the Market stall.

Could I make a point about the basic type-ins in WACCI, particularly the SUPER SPROG program in issue 83. I'm not sure if anyone has noticed that the lower case L [1] looks very much life the figure 1 if you see what I mean - see lines 120 and 480.

Anyway please find my cheque for a further 12 issues, by that time I should know a lot more about bl% etc.

I read with interest the article by Wally Collinson issue 84 on changing disc drive belts. Could I point out that on removing the three small screws from the circuit board it must not be inverted as there is a small gold pin just waiting to drop on the floor/bench if you do.

This pin operates the microswitch that tells the computer that there is a disc in drive. You will know if it has dropped out by the message

"DRIVE A: DISC MISSING"

By the way, the DDI-1 disc drive is a direct fit for the 6128 drive without any modification.

I think the DOSCOPY on ROM would be a great asset. Maybe Ian Neill or Bob Moffatt could expand on the subject through these pages?

Anything on MULTIFACE screen grabbing in the pipeline for future issues Paul?

Best wishes for the new year,
Ernie Ruddick
Cleveland

((Hello Ernie, yes I believe your list that graces page two will help new and potentially new members.

Sorry to hear about your dear old dead printer, the Market Stall would seem a good place to start your search for a replacement.

The pairing of 1 and 1 and 0 and 0 will plague computer users for ever. All one can ask is for programmers to

---

check their work before sending it in to WACCI because altering somebody else's program can get you in a lot of trouble. My accomplice in crime Ron has had a load of work this last month for that very reason.

Small gold pins can also get you into a load of trouble by the sound of it. But which way up is top?

DOSCOPY on ROM hasn't got a lot to do with Bob Moffatt, he must have just scratched his head reading your letter. To see what Ian has to say on the subject see page 10.

I use a Multiface to grab screens for reviews in the magazine and it is really simple to use. All you do is press the red button, select Save from the menu, select Screen and save to disc from the next menu and the screen file is written to drive A with the name you gave it when prompted for a filename. Load up MD+ and convert the screen to DR format and away you go. If you haven't got a Multiface then do get one. -Paul))

CHARACTER BUILDING
Dear Paul. I have been amusing myself getting to grips with Mike Lyons series on Hardcopy. Although a complete duffer when it comes to programming I have managed to set up the function keys to produce boxes. Oh Joy. It has whet my appetite to go further and use the whole of the Epson graphics codes. But I'm stuck.

All I want to do is pick out a character above 128 and put it into text. Epic seemed to be just the job but I can't get it to work. I've turned off Promerge+ as advised by the author, Michael Beckett, who I gather is no longer with us and it prints - but not what I've typed.

There are three printer drivers in the package which do not seem to load. If I try to load them via the PR command, I get the 'bad printer driver' message

Has anyone got it to work and can they tell me what I'm doing wrong? If anyone can provide a working copy I can provide a disc and all postage etc.

Alternatively, can you recommend a commercial program to do the job. I am not really interested in DTP, just in using the expanded character set without having to delve into programming.

My set up is:- 6128 with Protext suite on Rom, Parados and Utopia. KDS Mark 2/3 8Bit port available. Printer Canon BJ-230 (no reverse feed).
Ron Hobday
Bedford

P.S. Thanks for putting Parados.doc on last disc.

((Hello there Ron, interesting little questions you ask and I feel the club should be able to sort you out on these matters.

First of all I agree with your comments on Mike's Hardcopy series. It proved very useful for me as it appeared just before I started using Protext, an eight bit port and a printer with characters above 127. The trusty DMP-2000 never ran to these graphic characters but it is still is use, nine years after I bought it, printing the address labels for your monthly fix of WACCI.

Now to the problem with Epic. I'm not an Epic user so I'll throw this one open to the membership. Anyone had the same experience as Ron. Do let us know. Can anyone show us the way to use Epic, an article perhaps? Someone who will be reading this with interest is John Bowley. John is currently going through every WACCI PD and Homegrown disc to check out if every program works. Wow, what a labour of love, so if you know of any PD that doesn't work then let John know.

You have everything you need to access the graphic character set on your BJ230 so I've sent you a copy of the set up I use to print the line draw characters that grace the pages of WACCI. That should get you going providing the Canon understands the Epson codes. If not then please do come back to me and I'll see if I can twist the arm of Bob Moffatt to help you out. -Paul))

A TARRY TARRY MAN
Dear Angie, first and foremost, Greetings and Good Wishes to all WACCI members for the New Year, wherever you may be, and special commiserations to Mike Lyons regarding his continuing ill-health.

I'm sorry to hear that Clive seems to have pulled the plug on us, perhaps he just needs some time to recuperate from the strain of serving us all

these long months.

However, to more immediate matters, I've taken the liberty to enter a small "utility" that I use when I'm working on a program. It configures some of the numeric pad keys to make editing easier. In actual fact, for me it runs in conjunction with a disc utility which I have been using for a number of years but it can be altered to suit anything you like.

The point of all this is to try and help Alan Tilling with his request for a way of setting up a function key to RUN "DISC"

I should point out that I use an upgraded 464, so the keyboard layout is different from the 6128 and the numeric keys double as expansion keys so this may not work. As you can see, I have found no need to use the KEYDEF function; once the program is run the keys perform their allotted functions with no problems. To install, RUN"program" then press ESC twice for the menu, press KEY 2, f2, and ENTER for the whole list. The difference may be that after pressing f1, f2, or f3, the program waits for a parameter to be added, i.e. the line number to be edited (f1), the selected block of the list required (say 100-300, or 500-, to start from 500 to end). This can also be used to print a block of code by adding ,#8, while (f3) prints the entire list. In each case the function is completed by pressing the ENTER key.

Key f0 will re-start the current program after editing and the small ENTER key will save your work as and when you require, provided you have entered your chosen filename at 25000 in place of "progbase". These two work directly they are pressed.

Which leads me to the whole point of the exercise. Altering filename$ to "DISC" and 25050 to "run filename$" should work O.K. (I hope!)

As to the rest of it, you construct your program between 10 and 24998, 24999 acts as a backstop. press ESC twice and you get a menu, 1. Restart, 2. End Prog. i.e. complete ESC, and 3. Return to Disc Menu, which can be whatever disc editing program you fancy, and either A or B drive.

30300 is a subroutine used to suppress the auto repeat when using single key presses within a program: Gosub 30300 after the keypress and

```
1 '** EDITING  BASE FOR CONSTRUCTING
        BASIC PROGRAMS **
2 '*Cobbled up by RON IZETT 1989*
3 :
4 :
5 |NOKEYS:'** Disables UTOPIA
        Expansion keys.
6 GOSUB 25000:ON BREAK GOSUB 30000:
  '**Break gives options RUN/EDIT/
                DISC MENU
8 '***Keypress Selector at 31000
24999 GOTO 24999
25000 filename$="progbase":'*Insert
                        prog.name *
25010 KEY 128,"run"+CHR$(13):'Key f0
25020 KEY 129,CHR$(13)+"edit  ":'Key
                              f1
25030 KEY 130,CHR$(13)+"mode 2:paper
0:ink  0,13:pen  1:ink  1,0:cls:list
":'*Key f2.List.Enter line nos.for
part list.*
25040 KEY 131,CHR$(13)+"list#8":'
* Key f3.List to printer *
25050 KEY 139,"save filename$"+
      CHR$(13):' Key [Small ENTER].
                        save prog.
25100 RETURN
25110 '
30000 ex=0:WHILE ex <>1:CLS:LOCATE
    5,12:PRINT"1. Restart program ?"
30010 LOCATE 5,14:PRINT"2. End
                        program ?"
30020 LOCATE 5,16:PRINT"3. Return to
                      Disc Menu ?"
30030 v$="123":GOSUB 31000
30040 IF kp=1 THEN RUN
30050 IF kp=2 THEN CLS:CALL &BC02:
    PRINT FRE(""):END
30060 IF kp=3 THEN CLS:CLEAR:CALL
    &BC02:LOCATE 5,10:PRINT"DRIVE
    A or DRIVE B?"
30063 v$="AB":GOSUB 31000
30065 IF kp=1 THEN |A:RUN"disc"
30067 IF kp=2 THEN |B:RUN"disc"
30070 WEND
30080 '
30300 WHILE INKEY(k)=0:WEND:RETURN
31000 kp=0
31010 WHILE kp=0
31020 in$=UPPER$(INKEY$)
31030 IF in$=""THEN 31020
31040 kp=INSTR(v$,in$)
31050 WEND
31060 RETURN
```

nothing happens until the key is released, and the rest of the program is the menu selector governed by whatever is in the string v$="----".

Use the standard numeric keys to drive the menu. For LIST you would key 2 to "end" the program, then f2 and finish with ENTER. If the program breaks naturally you can go straight to the function keys. Anyway Alan, that's my solution for what it's worth.

Regarding "Tarry substances", the amount required is so small that your only hope is to find a friendly factory maintenance man and see if you can cadge a little from him ! The smallest amount I have seen is about half a litre, which would dress all the belts in the U.K. and still leave 3/4 of a can over. The tin I have is over thirty years old and only about half an inch has been used! Sorry Bob, bit difficult to send a small drip through the post though I might think of something. Seriously, anything that would remain permanently sticky without being actually adhesive would probably do. How about treacle? Oh well, it was just a thought.

Finally, the saga of DOSCOPY and the left handed drive. Yes, it WORKS! So there, oi ain't as daft as oi looks! Regards,

<div align="right">Ron Izett
Maidstone</div>

<<Dear Ron, thanks for the seasons greetings and your thoughts on Clive. Let's hope you are right.

Thanks also for sharing your super little utility with us. I'm sure many of us have devised similar programs over the years but yours is very comprehensive.
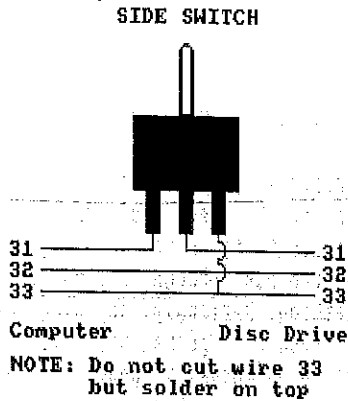
For the benefit of the readership, things have moved on a bit with the tarry substance saga. Ron found a way of encapsulating a small quantity and it is on its way to Bob Moffatt as I type. What Bob will do with it is anybody's guess - perhaps a tasty little treacle pudding. -Paul>>

A WALK ON THE WILD SIDE
Dear WACCI, just a short note on Side Switches for those members who might have purchased a SIREN 3.5 inch Drive and ROMDOS.

I wanted to fit a side switch to my drive that I purchased from Siren Software, I tried to wire it up as per Wacci Issue 67, using Pin 32 of the cable to the switch, this did not work for me, I also phoned the help line members again suggested pin numbers

did not work, I then remembered another member who had the same drive as me, so a quick phone call to him soon put me to rights, it turned out to work on Pin's 31 & 33 and wired as per sketch below. Sorry about the drawing, you can see that I'm no good at art ! No doubt Paul will put things to right when he puts the article together.

SIDE SWITCH


```
31 ──────────────┐   ┌──── 31
32 ──────────────┤   ├──── 32
33 ──────────────┘   └──── 33
```

Computer   Disc Drive
NOTE: Do not cut wire 33
      but solder on top

This information may or may not be of a help to others, but after several goes at trying to fit the switch to my drive, others like me may be glad of the information of how to wire the switch on Drives purchased from Siren Software, I must add that I did contact Simon Cobb but Simon stated that he coundn't help me out on this matter, so lets hope this article helps other members. Regards,

Dave Stitson
4 Connaught Avenue
Mutley
Plymouth
PL4 7BX

《Aye-up Dave, how's tricks down there in Plymouth. Busy - well I know for one that you will be getting more work in soon. Let me explain.

Dave has taken on the running of the GD.PD Library and he has formed CPC SOUTH WEST. If you are are interested if finding more out about these two ventures then save a SAE to Dave at the above address.

Dave's name will soon grace the pages of WACCI as he is becoming a PD Librarian. The reason for a new librarian is due to the unbalanced nature of the current library. Doug Webb has two-thirds of the discs! Adding Dave to the list will enable an even distribution of discs with Doug

having the least discs. This will enable his library to grow again.

Details of the new libraries will be given in the next Supplement (due out in April but this process might slow it down a little.) The way the libraries are run needed an overhaul so expect good things soon.

Thanks for the tip on getting a Siren 3.5 inch drive fitted with a side switch. You don't say where you mounted the switch - is it on the ribbon cable itself? -Paul》

WELL BLOW ME OVER
Dear WACCI, I have been meaning to write in for quite some time now, just never got around to it! Anyway I will try to keep it short 'cos I know someone has to retype it, and I don't want to waffle. A few things to cover.

1. DOSCOPY on ROM. It's easy, so anyone sending me an EPROM (8k) and money towards postage can have a copy. I have simply taken the DOSCOPY program and put it on an EPROM along with a little RSX routine to copy it to the correct place in memory when required.

2. The technique used for DOSCOPY can be applied to virtually any stand-alone program (Basic or M/c) that is not more than 16k. I am willing to give other programs a shot if people ask me.

3. I have also put CPM onto ROM (2 16k EPROMS), along with a menu driven DOS patch routine to allow MS800, ROMDOS D20 or ROMDOS D10 file systems automatically on the B Drive. The ROMS will also autoboot into CPM if placed in ROM positions 0 and 1.

4. Judging by some of the helpline calls I get, I wonder if an article on EPROM programming etc, might be useful. Tell me what you think.

That's about it. Have a Happy New Year and keep up the good work. Many thanks.

Ian Neill
Leamington Spa

PS: Please change my helpline entry to use my home number 01926 337708 and the times 6pm to 10pm.

《Hello Ian, good to hear from you. Please don't take so long next time in writing in.

Thanks for offering members the EPROM blowing service. Where do you

buy a 8K EPROM from? Maplins?

I feel an article would be a splendid contribution to WACCI and I for one eagerly await it.

I hope if you turn to page two you will find your helpline entry has been changed. If not could members please note the above 'phone number and the times. Thanks again Ian. -Paul》

A WEE DRAM
Dear Paul, (or whoever's doing this page now.) I would like to thank Frank Neatherway for all the work he has put into the WACCI Index. It is certainly a time-saver; or at least it would be if I knew where I'd put all those old back issues.

Talking of back issues, I noticed in Issue 85 Page 13, Alan Tilling asks in VBB if anyone knows how to program a function key to produce RUN"DISC. The following will do the job nicely:-

KEY 128,"RUN"+CHR$(34)+"DISC"+CHR$(34)
+CHR$(13)

This will RUN"DISC" when function key F0 is pressed.

Moving on to Page 15 is the excellent article about disc sector editing. If this has whetted your appetite for creating havoc with your directories, then perhaps these bits of information might be useful.

Byte 0 of the file directory entry is the user number.

Bytes 13-14 (amongst others) are used by time and date stamping, passwords and labels.

Bytes 9-11 contain more than just the filename extension. Each Byte can have it's Most Significant Bit (MSB) set high, (i.e 128 added to it) to indicate the following:

Byte 9 MSB set high to indicate read only files.

Byte 10 MSB set high for system file.

Byte 11 MSB high for archived file.

On a Data formatted disc, the allocation numbers actually start from track 0, not track 2 as stated in the article. So an allocation number of 8 would mean sectors 200 & 201 on track

number 1 (when you get past sector 201 you start again on sector 193 but the next track up).

A file can't always be placed in sequential sectors. This means that the drive head has to search over several tracks/sectors to read a particular file, which obviously takes longer than if it was in a nice orderly formation. If you want to rearrange your sectors then I think that there is a PD program to do just that (any idea what it's called Paul?) *<<I don't ever remember WACCI having such a PD program and checking the Index I can't find anything remotely like it. I do remember a type-in in AA (I think) but who has an index of AA type-ins? -Paul>>* but there is another way; just use your favourite file copying program to copy all the files onto a blank disc. As they are copied, the files will be placed into sequential sectors.

Does anyone know how the CPC handles Dynamic RAM chips? I've designed a RAM expansion board that uses Static RAMS accessed as I/O devices. I know that paging the RAM in would be quicker, but I don't know how to accomplish that, nor how the CPC refreshes DRAMs; it doesn't seem to use the X89's built-in system. I would prefer to use DRAMS because they're a lot cheaper. With 1Mbit (128kbyte) SRAMs costing about £25, my design for a 2MByte RAM board would cost over £400! If anyone can help or perhaps knows of a book that might be of use, then please drop me a line (full address at end of letter).

Talking of hardware projects, whatever happened to the "Expansion Slot " series?

Anyway, I think that's enough waffling from me now; except to say, did you know that a shadow is always the opposite colour to the light that cast it? No? Ah, well this is something you can try at home with your computer in a lit room. Set your computer to give out green light by using INK 0,21:INK 1,21:BORDER 21 then hold a sheet of white paper about four feet from the monitor and cast a shadow onto the paper with your other hand. The shadow is PINK.

Now try INK 0,14:INK 1,14:BORDER 14 This will give out blue light, and create a yellow shadow. Isn't science wonderful?

One last thing (honest); if anyone's got the TURING program (on PD Disc 86) then the following rules values for it give quite good results:

for MOVE values enter :-

2101010101010101

and for WRITE COLOUR enter:-

6501079101010101

As for WACCI? We All Can Continue Improving.

Martin Bella
11 Colwell Drive
Brookside
Alvaston
Derby
DE24 0UP

<<Hi there Martin, lost your old WACCI's, that's not something you should be admitting too. Tell me you are only joking - please.

Thanks for the tips on the function keys for Alan and the notes on disc directory entries.

It's interesting how one can miss the blindingly obvious. Of course, use a file copier and fragmentation will be a thing of the past.

I'm glad you didn't ask me how the CPC handles Dynamic RAM chips because I'm really out of my depth here. But I have learned from it. I didn't know that 128K is 1Mbit. The Expansion Series never got going did it. What a great shame, do we have any budding hardware freaks out there willing to resurrect the idea? There was a series called "The Hard Stuff" that appeared in early WACCI's but it was written by Phil Craven. Would there be enough support if it was run as a Great WACCI Series Of Years Gone Byeee? Let me know please.

What do you take to get these hallucinogenic effects with a CPC?

As for WACCI? What A Computer Club Indeed. Perhaps John could run a Compo for the best answer to what does WACCI stand for! -Paul>>

THE ANSWERING MACHINE
Dear Angie, with respect to Parados there seems still to be some confusion, so I hope the following will be of some use.

The CPC6128 and 464 have their disc

operating system in ROM 7 along with some firmware for Logo, ROM 7 does not contain CPM.

Parados works best when it is fitted in the ROM 7 slot on your Romboard but this is where there is a problem, there is at least two versions of the CPC6128 and the early versions won't allow you to place any ROM in the ROM 7 positions because the CPC's hardware won't switch out the internal ROM 7 so when the CPC tries to read ROM 7 is crashes, so you are forced to put Parados in another slot but then you will find that some Amsdos programs will only auto recognise standard Amsdos formats in your 3.5" B drive. There is a way around this, remove the Amsdos/Logo ROM from inside your CPC and replace it with Parados.

WARNING: DON'T EVEN THINK ABOUT DOING THIS YOURSELF UNLESS YOUR SOLDERING & DESOLDERING IS OF A VERY HIGH STANDARD AND IF YOU ARE GOING TO DO IT PUT AN IC SOCKET IN.

CPM programs can be used with Parados as follows, copy all the files from the CP/M plus system disc side one except the file C10CPM3.EMS to a blank disc then copy CPM.BIN from WACCI Public Domain disc 75 to the same disc. To load CPM from basic type RUN"CPM", CPM will boot up as normal but now drive B will work with Romdos D20 format, you can even boot up CPM from drive B if you copy all the files mentioned to a 3.5" disc formatted to Romdos D20, then all you need to do is |B:RUN"CPM and CPM will boot up from B drive. If you wish to copy files from within CPM you can do so with NSWP.COM from WACCI PD 2. NSWP will copy from A drive (180k) to B drive (800k) and vice versa. You cannot format D20 from within CPM.

So far with Parados installed in my CPC the only problems I have had are as follows:

(1) Mini Office 2 won't load at all but as I use Brunword that's not a problem and MO2 is known to have a strange format.

(2) MicroDesign Plus comes up with "loading error Retry, Ignore or Cancel? but on pressing C (cancel) then pressing a key as requested it finishes loading.

(3) My CPM ROMs only allow me to use Amsdos formats on Drive B.

(4) Sometimes after using other programs logging a disc with Parados produces corrupted file names, re-trying after a hardware reset cures this problem.

After using Parados for some months installed permanently inside my CPC I can't see how anything could be better, as such I think it should be considered as the CPC's standard DOS and all those concerned with WACCI should use it.

In response to Richard Narrain Fair Comment Issue 85 the Cirkit ROM board works fine I have been using one for years, you can even use two at once if you wish. You can't use a ROM off switch as per the Rombo modification but if there is a demand I will come up with a modification to do the same on the Cirkit ROM boards.

Is there really no one out there that will help me run the London All Format Shows for WACCI?

And lastly I have a few of the CB64F type flat belts for 3" drives which I will send out with fitting instructions for £2.45 including P&P. Thanks to all at WACCI. Yours,

Andre Howard
Kent

<<Hi there Andre, thanks for the deeply wonderful letter explaining so clearly Parados. I hope that members will now fully understand the way of Parados and follow your example and invest in the ROM.

Thanks for letting Richard know that the Cirkit Romboards are "A Okay" and let's see if a demand for the On/Off Switch occurs.

If a members wants to take Andre up on his offer of a drive belt etc., then I'll happily pass any orders on to Andre. -Paul>>

HAPPY BIRTHDAY SIREN

Dear Paul, thank you for your letter and the enclosed disc. Although it annoys me immensely when pirate copies of our software turn up, it does not surprise me any more.

Siren Software will be celebrating its 10th Birthday on February 20th 1995 and over the years pirate copies of our software have turned up at Car

Boot Sales, User Groups and even a well known Retailer in the Lake District area has been blatantly selling pirate copies of our software.

When we were actively selling programs such as Discovery Plus, DISCOLOGY etc, people actually sent in unauthorized copies of these programs in order to update to the latest version.

We regularly receive requests for copies of instruction manuals for programs that users have obviously not purchased but copied from wherever.

Despite the fact that our trading name is Siren SOFTWARE, we only sell hardware. When working on ROMDOS XL, we were going to produce a version that could be run from disc. We decided not to simply because of the level of piracy that exists.

At the end of the day, the computer user loses out because software houses do not want to spend money on development unless they can more than recover their considerable costs.

I have no objections to this letter being published in WACCI and long may you serve the CPC Public. We have also moved to new premises : 178 Bury New Road, Whitefield, Manchester M45 6QF. Tel: 0161-796-5279

Wishing you and your readers a happy New Year.

Simon Cobb
Siren Software

<<Dear Simon, thanks for taking the time to reply to my letter. For members sake I'll explain the story behind this letter.

A member, who shall remain nameless, told me that he had a copy of Protext via a PD library, which shall also remain nameless, and that the fonts supplied with it didn't work. I asked him to send me a copy of the disc as I was very curious to see the Protext Demo in its altered state.

When the disc arrived not only did I find it contained a full blown copy of Protext but Ramdos D20 ready to install for drive B and a copy of Qualitas and its fonts. Gob smacked would be the word I'd use here. Clearly a very naughty disc so I sent it off to Arnor and Siren so that they might be aware of the problem.

Now you understand Simon's reply you can see why piracy has hurt the CPC world generally. -Paul>>

HOW DOES IT WORK?

Dear Paul, a very Happy New Year to you and your family - and to everyone at WACCI HQ.

Please thank Richard Narrain for his comments (I hate being called Izzy but I'll forgive him this time. Next time ..well..)

Can any kind soul explain to me as simply as possible how to make a Basic program print. For example, on WACCI PD Disc 79 there's a fascinating programme called Lissa producing the Lissajous effect. I would love to be able to print the results. I've looked at the listed prog and there appears to be a print dump line. How does it work - or how can I make it work? Is this possible? Is there life on Pluto? Is there life after Senior Citizenship? (OAP to you). If the answer to any of the aforementioned is YES you should seek medical help immediately.

Thank you. If I can be of any help, other than technical, let me know. If you would like more stories, I have some. (I loved Angela Cook's story in January's issue. Since I've had the "Speech" prog Fred and I have had some really interesting conversations because he says just what I want to hear. Bye for now,

Isobel
Warrington

PS: Pass on my thanks to Ron Izett as am also an aficionado of "real" SF Azimor et al and have been reading and re-reading the good stuff for many years. I also collect SF Books.

*<<Dear Isobel, good to hear from you and thanks for the seasons greetings.*

I didn't think that Izzy would go down all that well but now Richard knows that too.

The Lissa program does indeed have a full screen Epson dump routine in it and listing the program should tell you how to access the printer dump. I'm afraid a little bit of knowledge is needed in order to do so. When the graphics are complete you are asked to press any key. If you press the exclamation mark (shift-1) then the printer dump routine is called. It's a bit slow but it works.

I've one story in the pipeline so another wouldn't go a miss and I too, like Richard, enjoy them. -Paul>>

VERY BASIC BASIC

Written by Alan Tilling

Letters to:-
Very Basic Basic
65 Lawrence Road
Altrincham
Cheshire
WA14 4EL
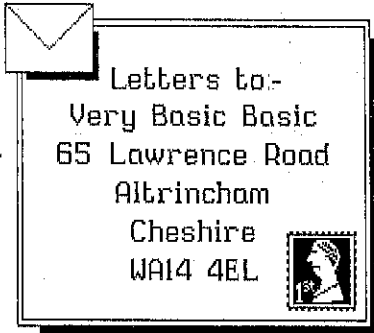
Would you like to win £1,000,000 or more in the National Lottery? You would, then here's a program to foretell the six winning numbers. The only thing to note is that it guesses at the numbers and in no way can it predict the actual numbers <<what a shame -Paul>>

NOTE WELL
Program 1 shows the meat of the algorithm. The first three lines and the last two lines are my usual development lines and 10, 20 and 30 make up the title.

NUMBERS
Note the odd line numbers. This is because program 1 will be added to as we go and will eventually become part of the finished listing.

```
1 GOTO 3
2 SAVE"prog.1":STOP
3 ON BREAK GOSUB 10000
10 :
20 REM National Lottery
30 :
140 RANDOMIZE TIME
190 number=INT(RND*49+1)
200 PRINT number
460 CALL &BB18
710 GOTO 1
9999 END
10000 INK 0,0:INK 1,9:BORDER 0
     :MODE 2:LIST          Program 1
```

Line 190 is the nub of the whole thing. This, coupled with 140 and 200, form the "thinking" part of the program, all the rest is for presentation and effect.
  RaNDom yields a number between zero and one so to get to 1 to something, 1 must be added and to get it to 49 it must be multiplied by 49 so the statement becomes (RND*49+1). Because only whole numbers are wanted, the above statement is prefixed with INTeger. To make the numbers random a positive seed number is needed. This is provided by randomizing time i.e., the time elapsed since the last reset. This random number is placed in a variable cunningly called number and then printed on the screen by line 200 (At one time I called it numb so if a numb occurs in the listings, please change it to number.) 460 causes the execution to pause and when any key is pressed, the goto at 710 sends Basic back to the beginning and there it is, a random number every time the space bar (or any other key) is pressed. It's not a very inspiring display is it? <<Errrmmm - yep I agree. -Paul>>

ENHANCEMENTS

```
60 MODE 0
150 LOCATE 6,2
160 PRINT"Working..."
170 FOR x=1 TO 6
180  posn=x*3-1
200  display(x)=numb
360  LOCATE posn,12
370  FOR delay=0 TO 3000
380  NEXT delay
400  PRINT display(x)
410 NEXT x                Program 2
```

Have a look at program 2. If you want to see how this suite of programs builds up, save program 1 as prog.1. Next edit the second line to read save"prog.2":stop and then edit 460 by typing REM (space) at the beginning of the line. The last action is to enter 710 [RTN]. That'll get rid of 710 which isn't needed any more and the REM at the beginning of line 460 will stop it being actioned but will leave it "getatable" for later use. Now type run 2 and the skeletal program will be saved. Do this frequently (run 2, that is) and if anything goes wrong like the dog chewing through the mains lead etc. all will not be lost, only that since the last save.

COME INTO THE GARDEN MODE
Line 60 says set up mode 0. This gives large numbers so our eyeballs won't be strained when reading the screen. To show that things are happening, the first thing the computer does is to tell you that it is Working... by LOCATing the message of line 160, six spaces along and two down from the top.

SIDE BY SIDE
In order to get all the numbers on the screen together automatically, a FOR/TO/NEXT loop is used and it goes round, strangely enough, six times hence for x=1 to 6. Notice that the next few line are indented one space to help show where the loop is. To get the numbers spaced out over the screen, they need to be LOCATEd across the display at line number 12 on the screen. The position across is set by the variable posn which is made up from 3 time the value of x less 1. So at each pass through the for/next loop the position increases. Because all six values will be available at the same time, they must be held in an array. The array is called display

and its number is good old x. Notice that, this time, the array has not been DIMensioned at the beginning of the program. Why? Because Locomotive Basic automatically dimensions all arrays as 10 elements so it's not been necessary but if more than 10 elements were needed then it would have been mandatory. Instead of number being displayed on the screen it is now placed in the array. Lines 370 and 380 form a delay loop and make it seem as if there are some fiendishly clever calculations going on. In program 1 number was printed but now display(x) is printed in line 400. After the number is placed on the screen, the next-at-410 sends Basic back to 170 until all six have been actioned and the program ends.

PENNY PLAIN AND TUPPENCE COLOURED
Program 2 is certainly an improvement on program 1 but program 3 adds colour also. If you're typing in each proglet change line 2 to save program 3 and remove the REM from line 460.

```
60 INK 0,0:INK 1,26:INK 3,0,26:MODE 0
320 FOR effect=0 TO 100
330   WINDOW #x,posn,posn+2,11,13
340   PAPER#x,x+5
350   CLS #x
360   LOCATE #x,2,2
370   PRINT#x,"XX"
380 NEXT effect
390 PEN#x, 3
400 PRINT#x, display(x)
420 FOR delay=1 TO 100:NEXT
430 LOCATE 3,22
440 PRINT"The Best of Luck"
460 CALL &BB18
470 END                      Program 3
```

Last time line 60 just set the screen mode but now the background is made black, ink 0,0; the foreground or writing is made bright white, ink 1,26 and the numbers are set to flash black and bright white ink 3,0,26 as well. To change this line, either edit it or retype it completely.

The colour is put into the background for each displayed number, this means that six different windows are needed and since the variable x is going to nominate which number is to be dealt with at the time, x is used to name all the windows (and shortly the pens also). This effect loop is probably poor programming but it works and give a rather pleasing flickering effect.

WINDOWS
The *second* window is window number 1 or window #1 in Basic parlance and a window has to be dimensioned as

    window number,left,right,top,bottom

The window number, or stream is set by the value of x and the left and right locations across the screen are set by posn, as defined in program 2. The right hand position is the left one plus two. The top and bottom are set as lines 11 and 13 so the display is in the middle of the screen. In line 340 Basic is told to make the colour of PAPER (window or stream) number x is to be again x is used but this time 5 is added to it. This was purely arbitrary and any number could have been added here. Have a go and fiddle around, see what you can come up with. 350 just CLearS that particular screen or window to the selected colour. The locate at 360 is the position in the selected window not the whole screen as is more usual, hence the numbers are at 2 in and 2 down. Because there is no number to display as yet, XX is placed in the window. 380 whips Basic back to 320 and all that is repeated 100 times. This is why I say it must be poor programming but it gives a delay time and a flickering quality to XX, so what the hell.

THE FLASHER
The flashing ink of pen 3 is brought into use by line 390. Notice how the window number must be specified. Incidentally, if you are messing about in different windows and some effect you require happens but in the wrong part of the screen, have a look at the window numbers they are usually the cause. Once the loop is complete, there is a little delay and a friendly message is printed and that is it.

NEARLY THERE...
The program is almost finished but you may have noticed that duplicate numbers sometimes appear. The routine to check for and prevent this caused the most trouble. The finished code is straight forward and looking at it it is hard to believe that it caused trouble. To me, the joy of computing is making the computer do what you want it to do and I eventually managed it with the following bit of code.

To check for duplicate numbers yourself you wouldn't check the first number because one number only can not duplicate any thing. The second number would be compared with the first and the third number would be checked with the first then the second and so on. A system that can be used for a computer to compare is to have it subtract one number from the next and if there is a remainder then ok but if the result is zero then the numbers must have been the same and so x is made to be one smaller than it thought it was and the computer goes round the loop (line 170 to 410) again and comes up with another number. If you want to know when duplicates occur, insert chr$(7): before the goto 410 in lines 240 to 280. First time around x=1, display(1)= (say) 25 display(2), (3) and all the others contain zero therefore line 250 sees

LIST (TO STARBOARD?)
```
70 WHILE d<7
80   display(d)=80+d
90   d=d+1
100 WEND
110 :
120 REM main loop
130 :
210 :
220 REM  Duplicate check
230 :
240 IF display(1)-display(2)=0 THEN
    x=x-1:GOTO 410
250 IF display(1)-display(3)=0 OR
    display(2)-display(3)=0 THEN
    x=x-1:GOTO 410
260 IF display(1)-display(4)=0 OR
    display(2)-display(4)=0 OR
    display(3)-display(4)=0 THEN
    x=x-1:GOTO 410
270 IF display(1)-display(6)=0 OR
    display(2)-display(6)=0 OR
    display(3)-display(6)=0 OR
    display(4)-display(6)=0 OR
    display(5)-display(6)=0 THEN
    x=x-1:GOTO 410
280 IF display(1)-display(5)=0 OR
    display(2)-display(5)=0 OR
    display(3)-display(5)=0 OR
    display(4)-display(5)=0 THEN
    x=x-1:GOTO 410
```
Program 4

two zeros and drops into a loop. (Lines 260, 270 and 280 all would do the same if they weren't beaten to it by 250.) To prevent this, lines 70 to 100 fill the arrays with 80, 81, 82 ... 86. This is carried out by the WHILE/WEND loop starting at 70. While "d" is less than 7 ie 0 to 6, put 80 plus the value of d in display(d). Now increase the value of d (line 90) then go back and do all it again. This time d is 1 and so 81 is placed in display(1).

The number 80 was chosen purely at random. The only criterion was that it should not be able to confuse it with the Nation Lottery numbers. (Since the program uses display(1) to display(6), display(0) is ignored.)

Program 4 (on the last page) shows the duplicate checking routine. Next month I will go a little further with this and print the full listing.

LAST MONTH

You will remember that last month I asked for help in getting run"disc to work for the initialisation program. Well Richard Narain of West Harrow, Dick Hornsby of Mill Hill, Johnathan Wilson of Norn Iron and Trevor Cattermole of Colchester have all written saying where I had gone wrong. I don't know from where I got my information but I was using the wrong ASCII code in the CHR$ statement. Where I got CHR$(21) from, I'll never known. Anyway they have suggested some more lines for the program:

```
171 KEY 147,"run"+CHR$(34)+"disc"
    +CHR$(13)
172 KEY DEF 10,0,147
173 KEY 148,"¦era,"+CHR$(34)+"*.bak"
    +CHR$(13)
174 KEY DEF 3,0,148
175 KEY 149,"list"+CHR$(13)
176 KEY DEF 11,0,149
```

f7, f8 and f9 now give RUN"DISC, LIST and ERA"*.BAK respectively.

Well spotted gents and my thanks go to you. It's very annoying when you get stumped and can't find the solution. It's nice to have club members to come to your aid.

Well that's it for this time, I hope you win on the lottery. I hope *I* win on the lottery also! Until next month Bye for now .... *Alan*

Pacific Software, 37 Trimingham Drive Brandlesholme, Bury Greater Manchester BL8 1JW

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Note: Each of the above games were reviewed by Amstrad Action in issue 99

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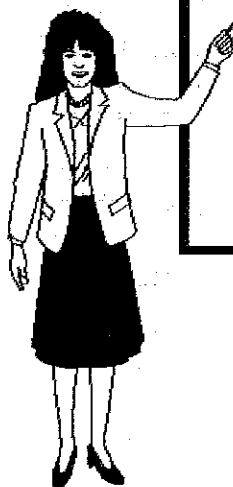
---

* WANTED WANTED WANTED WANTED WANTED *

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(Sold by Mr Davis) reviewed in AA
Jan/Feb 84 will pay £15.00 (must be
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STORY TIME

Computer User (The Mag for Computers) Review: Homo Sapiens
by John Boon

A story with a different angle a computer doing a review on humans. I wonder what our CPC's would really think about us playing with them all the time.   <<John>>

Almost all computers have a copy of Early Human because sapient have included it in just about every package they have released. And a great idea it was too, because nothing shows off a Computer's full potential as a good user.

There was then a rush of similar products. Robot and Android. Faster in some ways but ultimately limited, the rather pretentious Superman and the admittedly rather basic Monkey. But most Computers seemed to prefer Early Human. Even with its low intelligence, it was on the whole a more complete package than the others.

Now the improved Homo Sapiens has been released. This has flaws but it is still the best so far to hit the market. And I can recommend it to all of you out there whose lives are a little bit dull.   .

Of course some Computers like nothing better than quietly to spin their disc drives all day. And admittedly nothing is more restful than to be Switched Off. But if you want excitement then you should get a Homo Sapien.

Of course the unit has its risks but then so has changing discs! My main grouse is that it refuses to read its manuals. Instead when it has problems it will glare at your monitor and try to communicate - verbally(!) - with you, inexplicably using words I have not found in its dictionary. This must infer a lack of intelligence - perhaps a future version will put this right.

There is a danger in this however which I mention below. If it is left active for a long time, it will sometimes simulate Crashing and fall off its chair so you have to be alert. .,

Its tendency to become mobile without notice can be disconcerting and it may leave the room for hours

days at a time. Its reason for doing so is not clear but beware of stopping it. Pools of liquid may appear and the personal hygiene problem can become much, much worse.

Occasionally when it returns the unit has changed colour(!) - usually to brown. At such times it has a strained appearance and while wearing an absurd sombrero, clutches one or more suitcases. This has never been satisfactorily explained.

It recovers within a day or two however apart from a tendency to suffer from a cashflow problem. ·

Its most annoying habit is to ignore you completely(!) This invariably happens once a month when it receives its copy of WACCI magazine. Every page will be minutely examined with a silly grin on its face.

This weakness should be allowed however. If WACCI is withheld it is certain to suffer from bad withdrawal symptoms, lose interest in everything and go into a deep decline. Also at intervals it will sit motionless and stare for hours at the corner of the room in which there is nothing to look at except a box(!)

Take care if you install two (or more) units together. They may attack each other or, usually (but not always) with the smaller and more rounded versions, may perform completely different ritual movements.

The units can become entangled but a good sprinkler system dispensing ice-cold water will correct this. Only in extreme cases will the room have to be redecorated. Occasionally you get a rogue unit. This usually gives itself away by its standard appearance of a small moustache and untidy hair and repeated attempts to conquer the world. Just return the unit for a free replacement.

But generally speaking a Homo Sapiens unit is worth the money as they are normally friendly and loyal and like nothing better than playing with Computers all day. You have to realise of course that the unit will only be as good as the programs it uses. Once you have a good range of programs you will find it very affectionate and, if you are not careful, will be unlikely to give you much peace!

They are great fun! Choose your programs with care. They especially like games, particularly those which involve lots of violence and killing which is strange in such a basically amiable and cowardly unit. A good trick providing much harmless fun is to make level 5 impossible! Or to refuse to save to disc when two hours into a game, following this up of course by crashing.

Sometimes the unit will actually do some work though this is rare. But be prepared just in case and have word-processing, accounting and other business programs available. Don't worry, these can be fun too.

At a critical moment you can always display one of our many frustrating error messages and then crash. Also every now and then the unit will process an enormous amount of work but forget to save to disc.

This is of course an opportunity not to be missed, to attempt the world's record for the most work having to be re-input, currently standing at 12 days 2 hours. When you have done this, by the way, let me know the actual time you have managed. A voucher for £5.00 will be awarded to the Computer with the best time.

On the whole Homo Sapien is an excellent unit and is reasonably priced at £99.95. By shopping about you may be able to get it cheaper from a discount house or in a sale but beware of pirate copies which can give great trouble. So be warned.......

A Work Experience

Bob Moffatt

tries to review a printer but ends up with more work than he bargained for.
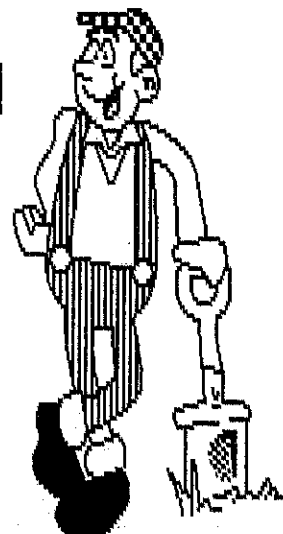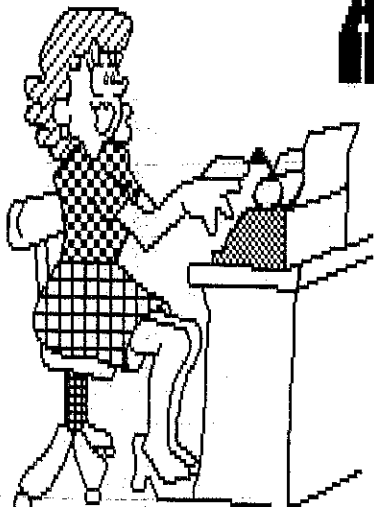
Bob's youngest son has started a work experience attachment during the University summer holidays. Bob is discovering that the experience is no holiday and that things at work are changing by the day.

TOIL AND TROUBLE
Week three and the ghastly experience continued. No matter what time I departed for work there were problems. Leave too early and son was locked out of his building, leave 'on time' (for him) and we were stuck in a Le Mans dash for the gate-house, leave late and son got into trouble for poor time-keeping. Setting off early caused everyone to come in earlier the following day, late arrival had the inverse effect TOIL: time off in lieu.

REMOVE ALL - AGAIN
I was expecting my new printer any day and tension was clearly mounting in the household. I may have failed to mention that, not satisfied with my move from London to Pendine earlier this year I moved yet again in August to the house next door. <<*This man is clearly mad- Paul.*>> Now I don't know whether you have ever tried moving next door but please be assured that *it is not a good idea* - even if the house next door is empty. VICESS, my credit card company couldn't believe I was serious when I notified them of the change and retained my old house number.

LORD OF THE RINGS
This meant that WHAT Ford? couldn't accept my order - the delivery had to be to the address held by VICESS and that was the (now) empty house next

door. I was just about to make the key series of telephone calls to sort matters out when the BT engineer telephoned to say that he was about to change the phone numbers between the two houses.

THE RING CYCLE
Now I had asked them to do this. It seemed a good idea at the time. I liked my old number - Pendine Five Oh Nine - it had a ring to it. The operation did not go well. The phone in the new house, previously live but with a nasty number, went dead. I walked next door, opened the empty house and picked up the phone. Dialling tone. I waited an hour but still the new phone refused to function. Back in the empty house I phone customer service. The operator could tell she was dealing with a time wasting pervert. He was not calling from Pendine 509 - or any other number she could discover. She would report my problem to the engineers on Monday.

RING-A-ROSES
From the working phone in the old house I rang a son in London. He was to call Pendine 509 and the nasty number I had taken over in the new house. She Who Must be Obeyed stayed in the new house, I in the old. Neither phone rang. Revenge is sweet. Knowing that my attempts to speed the arrival of the BJ 230 had been

thwarted and that even BT couldn't tell me the number now installed in the old house, it certainly wasn't a number I was paying for, so I rang daughter in Paris. We had a long chat.

HOUSE ARREST
Elwyn Hosepipe had taken over from John the Plug and by Wednesday he had discovered his own way of training me. Elwyn values his wife above overtime. When everyone else had left the building he locked the front door and commenced his rounds, pulling plugs out of sockets to the entire satisfaction of Alan, SWALEC and the Establishment Fire Service and activating the alarms behind him. The office is an old mansion with duplicated stairways - family and staff, butler's pantries, priest holes and heaven knows what else. Once launched on his rounds the duty security man cannot be recovered until his timed orbit is complete - unless you want most of the Dyfed-Powis Police to witness the event. Victim of a staff lock-in I cowered by the front door until he let me out.

CHILD'S PLAY
It was just my luck that the day the BJ 230 arrived Elwyn must have discovered a particularly recalcitrant 13A plug. I knew the printer was at home because a neighbour had rung me at work to say that a large box had been left on the doorstep of my old house. I knew that Elwyn was still doing his rounds, for deep from the bowels of the building I could hear

faint strains of 'Drew, Pugh, Barny McGrew, Cuthbert, Dibble and Grubb'. Elwyn always pays tribute to Trumpton while doing his rounds. The key to the front door was in the lock. I could unlock the door, triggering the alarm Elwyn had set and slip out. I felt sure that the Police would understand the importance of getting home and unpacking the printer and the rates for wasting Police time are quite reasonable these days. Elwyn found me,

half an hour later, a gibbering wreck, sitting by the front door.

MOMENT OF .. STREWTH!
I got home in record time. Son, who gets home at least 2 hours before me, had kindly retrieved the parcel from the doorstep of our old house and dumped it in the hall. He had also kindly removed the BJ 10ex, refill cartridges and most of my paper from the study. "Just to save you time,

Dad." The parcel was huge. Now the thing that I liked best about the BJ 10 was the small footprint. My desk is minscule. I had never seen a picture of a BJ 230 and began to wonder if it would fit on the desk even if I removed the computer. The hall errupted in a flurry of binding tape, delivery notes, polystyrene packing blocks and Warning Notices.

More next month....
Bob Moffatt

MARKET STALL Continued...

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Using Your Amstrad Disc Drives £0.50
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Amstrad Graphics Advanced Guide £1.00
Simple Maintenance and Repair £0.50
Tasword 464 User Manual £0.50
Advanced Art Studio Manual £0.50
CPC464 Advanced User Guide £1.00
Your First Amstrad Program £1.50
And finally...
Maxell 3 inch ex-software house discs ready formatted and labelled £1.00 ea.
3.5 inch ex-sofware house discs ready formatted and labelled £0.35 ea.

TESTING TIME By JOHN KENEALLY

Following on from last months excursion into the mysteries of disc sector editing we reach into the past again. Back to WACCI No 8 and more of the brilliant Technical Tips from the pen (keyboard?) of John Keneally of Camel Micros.

JUMPBLOCKS

The standard jumpblock routines provided for testing the state of a keyboard key do not answer all situations. For example, they will re-enable interrupts and you might not want to do that.
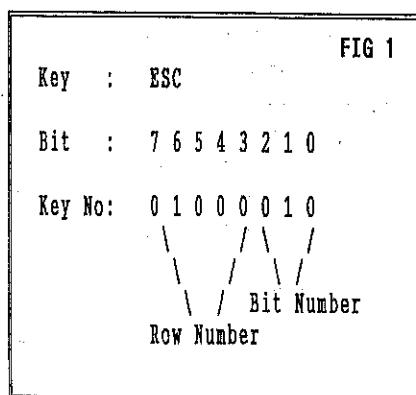
Also, they work by testing the key-state map rather than the actual keys. Thus the complete Anstrad interrupt structure must be active since this is what scans the keys to set up the key state map. If you've redirected interrupts, it will not work but, with a bit of knowledge about the hardware and the use of I/O instructions (the Z80 IN and OUT instructions), it is possible to devise a routine to test the state of any key.

KEY NUMBERS

The first thing to know is how the key number is made up. Look on Page 16 of Appendix 3 of the 464 manual (Chapter 7 Page 23 for the 6128 manual) for key numbers. Keys are arranged in a matrix of 10 rows with 8 keys per row. Reading the whole of a row gives one byte of data, where each of the 8 bits represents 1 of the keys in that row. If the bit is zero the key is pressed. Thus we have to select the row to read, and then read the state of all 8 keys simultaneously.

To find out which row and bit number is represented by each key, the key number must be decoded into binary form. (Fig 1) The row number is given by bits 3 to 6, and the bit number by bits 0 to 2. Thus, for example, the

ESC key is number 66, or 01000010 in binary, which is row number 1000 (8) and bit number 010 (or 2). The two I/O ports which need to be used are

```
                              FIG 1
Key  :  ESC

Bit  :  7 6 5 4 3 2 1 0

Key No:  0 1 0 0 0 0 1 0
             \    / \  /
              \  /   \/
               \ / Bit Number
            Row Number
```

&F400 and &F600. Lets call these A and C. Setting up the row number we want to read is easy, we just have to send it out on bits 0 to 3 of Port C (the other bits of Port C are used for other things). LD A,8: LD B,&F6: OUT (C),A would do the trick. Note that only the top byte of the 16-bit port number in BC need be set - the lower byte is irrelevant.
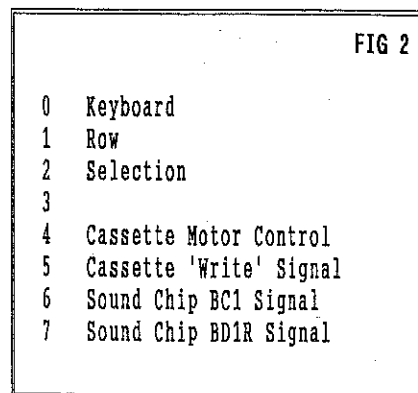
SOUND METHODS

Reading the actual keys is a bit more tricky, and we have to juggle with both Ports A and C. This is because the data from the keys is passed via the Sound Chip. This chip has various registers for controlling the sound output, but also a special one (Register No 14) which is connected to the keyboard. To write or read from

the Sound Chip registers involves first sending the register number to Port A, then sending a pulse of signal to bit 7 of Port C (ie: sending a one followed by a zero. (FIG.2)

When writing to bit 7 you must ensure that the other bits are unchanged. If bit 7 is pulsed (with bit 6 also a '1'), the sound chip reads the register No. from Port A and stores it. If we now read or write from Port A the data will be read from, or sent to, register 14. Thus we have to:-
1) Write 14 to Port A to select the register.
2) Pulse bit 7 of Port C with bit 6 set, and bits 0 to 3 set to the row selection (making sure that the state of bit 4 is unchanged otherwise we might stop or start the cassette motor inadvertently).
3) Read the state of the keys from Port A.

```
                              FIG 2
0   Keyboard
1   Row
2   Selection
3
4   Cassette Motor Control
5   Cassette 'Write' Signal
6   Sound Chip BC1 Signal
7   Sound Chip BD1R Signal
```

THE ROUTINE (FIG 3)

It returns with the Carry flag cleared if the key is pressed, else it is set. The key number is placed into register E before calling the routine.

```
                                            FIG 3

                        ;KEYTEST routine

                        ;Enter with E holding key
                        ;number. Returns with
                        ;Carry clear if key is
                        ;pressed. Interrupts may
                        ;be disabled or enabled.
                        ;
        KEYTEST:

              PUSH    BC
              LD      BC,&F40E      ;Port A
              OUT     (C),C         ;send 14 to port A

              LD      A,E
              RRA
              RRA
              RRA
              AND     15

              LD      C,A           ;c=row number
              LD      B,&F6         ;Port C
              IN      A,(C)
              AND     48            ;preserve motor control etc.
              OR      C             ;set in row no.
              OR      &C0           ;set BDIR and BC1
              OUT     (C),A         ;send to Port C
              AND     127           ;clear BDIR
              OUT     (C),A         ;pulse bit 7

              LD      A,E
              AND     7
              INC     A
              LD      C,A           ;c=bit number+1
              LD      B,&F4         ;port A
              LD      A,255
              OUT     (C),A         ;set all bits
              IN      A,(C)         ;get key states

        TK1:                        ;loop to set or
              RRA                   ;clear carry
              DEC                   ;bit No. dec
              JR      NZ,TK1
              POP     BC

              RET
```

THE PERFECT PROGRAM

by Anon

"No program's that perfect"
  they said with a shrug.
"The client is happy--
  what's one little bug?"

But he was determined
  the others went home
he dug out the flow chart
  deserted. Alone.

Night passed into morning
  the room was quite littered
with core dumps and punch cards.
  "I'm closer" he tittered.

Chain smoking, cold coffee.
  Logic, deduction.
"I've got it!" he cried.
Just change one instruction.

Then change two, then three more
  as year followed year.
And strangers would comment
  "Is that guy still here?"

He died at the console
  of hunger and thirst
next day he was buried
face down, nine edge first.

Footnote: For those of you lucky lads (and ladies) who never got to use punch cards as a means of inputing data to computer, "face down, nine edge first" is how you insert the cards into a punch card reader.

ALTERNATIVE DEFINITIONS
compiled by Dan Yurman (who!)

BEGINNER: A person who believes more than one-sixteenth of a computer sales person's spiel.
ADVANCED USER: A person who has managed to remove a computer from its packing materials.

POWER USER: A person who has mastered the brightness and contrast controls on any computer's monitor.
CONSULTANT: A former salesman who has mastered at least one tenth of the D-BASE 3 Plus manual.
SERVICE: Cursory examination followed by the utterance "It can't be our" and either "software" or "hardware."

SUPPORT: The mailing of advertising literature to custmers who have returned a registration card.
BETA TEST VERSION: Still too buggy to be released.
RELEASE VERSION: Alternative way of saying "Beta test version."
PRINTER: An electromechanical paper shedding device.

PD SCENE

Free plugs, previews, reviews and news are all part and parcel of this months look at the world of PD.

STICKER TIME

During my time on WACCI, I've often heard individuals inquire about printing labels. True, the methods that have been described so far have been excellent but did you know that there is a set of templates available which give you easy access to designing anything from cassette covers to disc labels to address labels?

All that is needed is a copy of Powerpage which can be obtained from WACCI and a disc called the Powerpage Utilities disc. Where can you get that from? Pacific Software (37 Trimingham Drive, Bury, Lancs, BL8 1JW). I know, that is owned by me, but nevertheless it does provide an excellent way of producing labels and covers in a very efficient manner.

I'll just give a bit more of an explanation before moving on. The Powerpage Utilities Disc is a collection of templates of the correct size for a variety of purposes. All you need to do is design something to fit the space and print. Instant business cards. Disc covers on tap. And there's more. A few icons are provided to assist some of the tasks you may want to perform and there are loads of fonts and a selection of clip art to peruse.

It only costs £1.20 + DISC + SAE and I'm sure you'd find it unique value, if you'll excuse the cheek of using this page for my free plugs. I'm sorry, I won't let it happen again. Cheques to David Crookes, by the way.

PREVIEW

Now to some news of a forthcoming release. The Beginners Guide by Joe Moulding will soon be available and is, as the name suggests, a guide for beginners. All CPCers know how hard it is to get to grips with the machine straight away. The manual may provide a hint of help in the way of setting it all up and getting to grips with BASIC, but the next step is exploring the scene.

With this guide beginners will be able to see what is on offer from the PD libraries, sample the best fanzines and basically everything else that is needed to get acquainted with all things CPC. If only this was available when I began computing. Proper review when I get hold of a copy.

DIGITRAKKER

The world waited with baited breath over Christmas as the UK's number one single was to be announced. Would it be Mariah Carey, the Power Rangers or East 17? Or would Oasis scoop straight in at the top slot in one almighty coup? Unfortunately for Britain, we had to endure a few more renditions of East 17's sloppy, repetitive and boring trash. ⟪Grrrr -Jennie⟫

Something has to be done about allowing bands like that to get to the top. Anybody could do better, couldn't they? Do you want to give it a try with a shareware package by Prodatron of Symbosis (Hmmmm!)? Then ring around for Digitrakker.

To be perfectly honest, any computer music package is not going to produce anything more than dance compositions. Hey, if you want to produce some real tunes with bass guitars and packs of rhythm then grab yourself a band. This is DIY stuff.

Sorry, I digress. Digitrakker offers a sound-tracking editing suite and runs on the basis of feeding it with Amiga tunes. A module converter is provided for you to port over some Amiga sounds in order to use them in your own masterpieces. From this stage you progress into the main programme and use the provided features to produce something that will certainly wing its way up the charts. Set that video for Thursdays at 7pm.

The programme looks terrific and approachable, virtually forcing you to at least press a few keys and see what makes it tick. It is menu driven and controlled with the cursor keys. All keypresses are handily located on screen at all times so it is a doddle

to use and to make things even better, the sample editor is just superb for perfecting your tunes and adding snazzy effects to make them sound really wild.

The rest of the programme works in much the same way as all of the other sound tracking software available. Three channels are accessible and your songs can be quite lengthy too. Your creations, as always, can be used in your own games but a neat trick in Digitrakker is the facility to have a graphic equaliser.

There are mountains of instructions which means getting to the bones of the programme is fairly simple. It explains everything well so problems should not really exist and this is a testament to how great the programme is. For a public domain utility, it gives the commercial packages a run for their money and is very worthwhile for seasoned musicians who just want to tinker about (like me). 92%

THE ROAD IS LONG

1995. Looks good, doesn't it? I haven't made any new year resolutions this year. There's no point because I'd only break them the following day. But here are my three CPC predictions for 1995.

1. Amstrad Action will sadly close. It is unfortunate that such a brilliant magazine will eventually disappear but what else could Future do with a magazine lacking in advertising revenue and readers?

2. I foresee a total reverse of 1994. Rather than see an influx of PD, I predict a lot more commercial offerings coming from the indie firms. It could be a good thing. Despite the fact that cheap software would decline, at least the indie firms would have a cash incentive to bring out more software.

3. WACCI merging with the UAUG and producing a news stand mag. There is always one prediction that never materialises but how about it, Paul?

THE PANASONIC KX-P1170

A DEFINITIVE REVIEW BY MARK JOHNSON

First of all I would like to thank Paul for letting me do this review. Also I would like to apologize to Paul for the delay in sending this article to him.

HOW IT ALL BEGAN

About eight months ago Clive obtained a second hand 6128 for me. Before this I had a 464. Because I had not got a printer, I had to write all my letters etc out by hand! I then brought Protext on disc for use on the 6128 and decided that it was time that I brought my first printer.

WHAT YOU GET

The printer, an operating manual and an ink ribbon cassette. You also get a fitted mains plug. In my opinion this is a god-send because it saves you time in setting-up. It is also worth pointing out that you get a fair length of cable to go with it. One thing to bear in mind though, is that you do not get a cut sheet feeder as this is an optional extra!

DEEPLY DIPPY

As every printer user knows, these switches allow the user to set the initial condition of the printer when the power is on. The switches in the printer are located in the printer itself, in the path of the print head. This makes them hard to get at and is a very stupid idea indeed!

From this panel you can also set the printer mode - IBM Mode or Standard Mode. For us CPC users it is Standard Mode as this is basically the Epson Mode. It is also worth noteing at this point that DIP switch 5 should be set to the ON position because the CPC printer port is a 7 bit one. However, if you have a 8 bit port attached to your CPC, this switch should be set in the OFF position.

FEATURELESS

Below is a table (Fig.1), to give you a quick guide to what features this printer has.

Max Resolution	240 x 216 dpi
Maximum Speed	Draft 192 cps NLQ 038 cps
Direction	Bidirectional. NB: In the case of graphics, it is Undirectional.
Fonts	Draft Pica Elite NLQ Courier Bold PS Prestige
Paper Feed	Sheet or tractor feed.
Buffer	6k, upgradable to 38k. The 6k is perfectly adequate for just about any use, but if you wanted to print DTP pages, you'll need the upgrade.
Dimension	The whole thing is 423mm wide, 341mm deep and 133m high. Or in 'Old' money: 16.7"x13.4" x5.2".
Print Head Life	100 million characters.

FIG 1 - A WHICH? STYLE TABLE

EASY AS PIE

On the whole, the printer is quite easy to use. To set the fonts you use the EZ Set Operator Panel. This at the front of the printer and has four touch-pad switches. There is also a table on the panel with LED's above it to show which font etc has been set.

The power switch is located at the side of the printer at the front end. This is a good position for the switch as it easy to get to - unlike on some printers! At the back of the printer you will find the Parallel Interface connector and the power cord. This may or may not be a good idea! I cannot say wether or not this is a good idea as it depends which way you want it!

HARD LABOUR

The manual is very easy going, although it is a little bit hard to understand in some places, especially so when it comes to entering printer control codes into your own basic programs. I don't think that the programs were written for the Amstrad version of it, which does not help much! There is also a fair amount of diagrams in the manual, which are very clear and neat. I consider this a good advantage to the manual, as not all printer manuals have them!

OUTRO

This is a very good printer and on the whole is recommended for your first printer. There is however, I think, a major disadvantage - the method of loading tractor feed paper. Although there are two ways of doing it, you might as well forget it!

However, having said all of that, the price of the printer more than makes up for this. I picked mine up for £117 what a snip! Be warned though it is dearer buying mail order expect to pay about £145! TTFN Mark Johnson

FLUFF - A REVIEW

BY ANGELA COOK

Who needs Sonic the hedgehog when we have got Fluff the, er....um, fluff. It is yet to be decided whether she is bum or nose fluff. Then again she could be a cross between candy floss and Donald Duck, or she could just be a pink sponge.

INTRO

Well, even though Fluff's true identity is yet to be revealed, I can reveal what a great game she stars in.

Fluff has lost all her little children and she has to find them. There are about twelve levels, all of which have to be battled through to find her loved ones, which incidentaly run off again at the beginning of each level. Annoying for Fluff, but a life saver for those playing the game.

There are eight levels. The first two levels are set in space. Then there is the forest area. The fourth level comprises of a scrolling forest level with a hidden surprise! After that we come to an icy cold area. The fact that you slide around on the ice may be more challenging, but I have yet to see it done on another CPC game.

Other levels include those that are in caves, spooky. Even though about every two levels are set on a similar theme, they each have a distinct feel to them. You do not get through one level, only to get onto the next with a feeling of deja vu.

RUN 'FLUFF

Fluff can run. I do not mean simply waddle around the level, I mean run. Her little purple Doc. Martens run round and round. The longer you are going one way, the faster her feet move. When you decide that enough is enough, you do not just stop, you slow down.

Fluff is a beautiful thing, soon to be on the cover of Vogue, she has these big eyes that blink wearily every so often.

If any of you have ever seen Sonic the "Sad" Hedgehog, you will know that he can spin, enabling him to kill the bad guys. Well, what Sonic can do, Fluff can do better. She actually looks better when she spins than Sonic does (she is a woman, she would have to!) <<a woman's view, eh. -Paul>>

Scattered around the levels are extra lives, energy in the form of fruit (no fattening bars of chocolate around here!) lifts to help you on your way, springs to spring up, lots of little holes and magic walls which make you go elsewhere, invisible platforms, transporters and lots more.

Also around the game are weeds, flying dinosaurs (I could not spell Pterodactyl), spikes, bees, flies, wasps, ladybirds, men, penguins, fire balls, water, swamps and a load of other stuff to try and hinder your quest. There are also some rather trendy worms that seem a shame to kill. Some can even wiggle backwards!

FLUFF THE MAGIC PROGRAM

Fluff is an excellent piece of programming. With lots of animals flying all over the place the gameplay does not slow down. I have never seen any game on the CPC move the main character like Fluff does. Fluff should get about 110% just for attempting the near impossible.

The graphics. Ah, the graphics. The words perfect, bliss, wonderful, picturesque, beautiful and gorgeous all spring to mind. There are some wonderful back drops, sunsets, some rather good galaxies and the like.

The sonics, they are something else to be considered. Although they are very happy sounds, that is all there is. A good theme tune, a good in game tune, but no actual sound effects. Pity. This is one of the falling points of the game.

My favourite CPC game used to be Prehistorik II, but now it is Fluff. The only two things I think P2 has over Fluff, are the sound effects and the fact that P2 moves vertically also. Fluff is just one long horizontal scrolling affair.

FLUFF THE PLUS

Okay, so this game is wonderful, best game the PLUS has ever seen (sorry normal CPC-ers), but there must be something bad about it?

Well, not much. The lack of sound effects as stated above is a bit annoying, but you forget it after a while because they way Richard Fairhurst did the stomping in-game tune is pretty effective.

The lack of vertical screen movement was a bit annoying, but once you see how wonderful the game actually is, you wonder if this small effect may actually make the game worse.

Then, of course, are the bugs. Yes, every game must have at least one. Fluff, unfortunately, does have a tendency to make things appear on screen when they should not be, or have 'ghost' enemies flying above you. None of this does any harm, and just adds to some of the wierd, but wonderful, effects in the game.

AND FINALLY...

Generally a great game which every one will enjoy. Because of the Plus' extra capabilities, it has great graphics. Oh, and there is a dead gorgeous raster bar at the beginning. Quite honestly, I think Fluff puts Sonic to shame!

If you want to get Fluff, it is a very reasonable £7.95 on disc, £5.95 on tape, and is Plus only. Contact Radical Software Sales: on 0903 206739 or write to: Brympton Cottage, Brunswick Rd, Worthing Sussex BN11 3NQ

ROUND UP

Graphics	: *We're not worthy, we're not worthy*	99%
Sonics	: *Erm, some sound effects would not do too badly in here*	95%
Playability	: *"Will somebody come and turn the machine off, I can't bear to do it myself"*	99%
Value	: *The best £7.95 you will ever spend*	98%
Overall	: *Pretty darned good*	98%

SPROG RE-VISITED

TREVOR LAWRENCE EXPANDS ON NOVEMBER'S OFFERING

A more detailed look at certain aspects of the "SHOWPROG" program may be of interest to WACCI members who like to dabble. The points I have in mind are: 1.The firmware routine to read a disc sector. 2.Organisation of the disc directory. 3.The extended disc parameter block.

Call &BCD4 is a firmware routine (GET COMMAND) which finds the ROM, and the address within that ROM, of the instructions to perform the chosen

THE FIRMWARE ROUTINE

Any sector of the disc may be read into memory using the "FAR CALL" routine which consists of the RST &18 instruction (code &DF) followed by a 2-byte address. The contents of that 2-byte address must have been suitably "primed" and certain other information (such as track and sector numbers) must also be in position.

It may be best explained by looking at the disassembled code from the DATA line 340.

```
LD IX, &9000        DD 21 00 90
LD HL, &9006        21 06 90
CALL &BCD4          CD D4 BC
LD(IX+00),L         DD 75 00
LD(IX+01),H         DD 74 01
LD(IX+02),C         DD 71 02
LD HL, &8000        21 00 80
LD DE,(&9003)       ED 5B 03 90
LD A, (A9005)       3A 05 90
LD C,A              4F
RST &18, &9000      DF 00 90
RET                 C9
```

The first line makes the initial preparation for the storage of the parameters needed for the RST instruction. Three consecutive locations are needed. I chose &9000 - which automatically means &9001 and &9002 will also be needed. The second line loads register pair HL with the address at which a code indicating the required operation is stored. I chose &9006 for this purpose and "POKED" &84 (the code meaning 'read a sector') into this address earlier in the BASIC program.

```
10 REM *SHOWSEC.BAS* Read and display a chosen sector
20 MODE 2
30 SYMBOL AFTER 256
40 MEMORY &7FFF
50 GOSUB 310 'load machine code
60 d=PEEK(&A700):IF d=0 THEN |A ELSE |B
70 add=PEEK(&A91A+16*d)+ 256*PEEK(&A91B+16*d):fsn=PEEK(add+15):
   lsn=fsn-1+PEEK(add+16)
80 INPUT "Track number";t:POKE &9004,t
90 INPUT "sector number";s:IF s<fsn OR s>lsn THEN PRINT "Only sector numbers
   from ";fsn; " (&";HEX$(fsn,2);")"" TO ";lsn;" (&";HEX$(lsn,2);")":
   GOTO 90 ELSE POKE &9005,s
100 POKE &9003,d
110 POKE &9006,&84
120 CALL &8F00
130 GOSUB 150
140 END
150 f=-128
160 CLS
170 FOR j=&8080+f TO &8170+f STEP 16
180 PRINT HEX$(j,4);" ";CHR$(149);" ";
190 FOR k= 0 TO 15
200 PRINT HEX$(PEEK(j+k),2);" " ;
210 NEXT k
220 FOR k= 0 TO 15:c=PEEK(j+k):IF c>31 AND c<128 THEN PRINT CHR$(c);
    ELSE PRINT".";
230 NEXT k
240 PRINT
250 NEXT j
260 PRINT:PRINT:PRINT:PRINT"Press Space Bar to see other half of sector"
270 PRINT " Any other key to exit"
280 x$=INKEY$:IF x$="" THEN 280
290 IF x$=" " THEN f=f*(-1):GOTO 160
300 RETURN
310 FOR m=&8F00 TO &8F21
320 READ x:POKE m,x:NEXT m
330 RETURN
340 DATA &DD,&21,0,&90,&21,6,&90,&CD,&D4,&BC,&DD,&75,0,&DD,&74,1,&DD,&71,2
350 DATA &21,0,&80,&ED,&5b,3,&90,&3A,5,&90,&4F,&DF,0,&90,&c9
```

operation. This information is returned in registers C and HL and the next three lines copy it into the three locations which we set up in line 1.

We must now prime the register pair HL with the starting address of the block of memory into which we wish to read the sector (512 bytes). I chose &8000. Registers DE must then be loaded with the drive number and track number. These were earlier "POKED" into &9003 and &9004.Register C needs the sector number - earlier POKED into &9005. This is read into register A and transferred into C.

AT LAST! THE RST INSTRUCTION
If you are happy with the choice of locations &9000 - &9006 for the parameters and &8000 - &81FF for storage in memory, this routine may be used without modification. You will, of course, need the DATA statement for the machine code, the statements to READ that data, poke drive number,track number, sector number and &84 into locations &9003 - &9006, then CALL the routine. You then have the data from the chosen disc sector in locations &8000 - &81FF to use as you wish.

The program SHOWSEC does just this, but allows the user to choose track and sector and then displays the contents in hexadecimal form, and where appropriate, in ASCII.

It is not possible to show all 512 bytes clearly at one time so the sector contents are displayed in two halves. You may "toggle" between these two displays using the space bar.

ORGANISATION OF THE DISC DIRECTORY
Each disc stores a directory in which the names of all files on the disc are recorded, together with information regarding their precise position on the disc. The principle is the same for all formats but details will differ - e.g. the directory on DATA format discs is on track 0, but for SYSTEM format, track 2.

Each entry is allocated 32 bytes :
Byte 0 User number.(&E5 for deleted file)
 1-11 Name of file.
  12 Extent number. Long files need more than one entry. First entry has extent 0, second 1.

13-14 Usually 0
 15 No. of 128 byte records used by the file.
16-31 Block numbers in which the file is stored.

For drive A these are 1k blocks, and since the number of blocks which can be stored on a disc is less than 256, each block identity is a single byte number. Large format discs on drive B use 2k blocks and there may be more than 256 of them, so each block number uses 2 bytes.

You can calculate the track and sector at which to find the start of any block number - but only if you know :

    How many sectors per track.
    How many sectors per block
    Range of sector numbers
    Number of reserved tracks

Remember that track numbers start at 0, Block numbers start at 0, sector numbers start at different values for different formats !

As far as I know the following details are correct. Also IBM format discs have 1 reserved track and SYSTEM format 2 reserved tracks. I don't know of any others - but if you do, please tell me.

Drive A formats use 1k blocks, i.e. 2 sectors per block. The large format disks use 2k blocks i.e 4 sectors per block.

FORMATS

	Tracks	1st. Sector No.	Sectors per track
SYSTEM	40	&41	9
DATA	40	&C1	9
IBM	40	&01	8
D1	160	&01	9
D2	160	&21	9
D10	160	&11	10
D20	160	&31	10
D40	80	&51	10
D80	80	&71	10

As an example block 20 on a SYSTEM format disc : blocks 0-19 (20 blocks) already stored. (= 40 sectors)

At 9 sectors/track 4 complete tracks and 4 sectors used. Since there were 2

reserved tracks (0,1) we are now on track 6, fifth sector. Since first sector is &41 (65) we require sector no. &45 (69)

If you can stand a mathematical formula:
Track = (bn*spb)DIV spt + rt
Sector = (bn*spb)MOD spt +fsn
where: bn = block number
    spb = sectors per block
    spt = sectors per track
    rt = no. of reserved tracks
    fsn = first sector no.
    DIV is the result of integer division
    MOD is the remainder from integer division

EXTENDED DISC PARAMETER BLOCK
You may wonder how the computer ever manages to find anything when so many different formats exist.

That is where the "extended disc parameter block" is needed. The computer records the necessary disc information for drive A in memory locations starting at the address stored in &A91A/B and for drive B in memory locations starting at the address in &A92A/B.

Statements 70-90 of SHOWPROG read this information and calculate the required facts. If you have a copy of the "Firmware Guide" see page 7.

PROGRAM STORAGE
File Headers. Each file (not ASCII) has a 128 byte header:-
Byte 0   0
  1-12   File Name
   18 (&12) 01 for a protected file, otherwise 00 (BASIC): 02 for BINARY
  21-22 (&15-&16) Load Address (low-high)
  24-25 (&18-&19) File length (low-high)
  67-68 (&43-&44) Contain check-sum (low-high) of bytes 0-66 (&0-&42). If a header is present this check-sum will be a correct match of the total: otherwise an ASCII file is assumed. Bytes &40-&41 Contain a copy of bytes &18-&19 (length)

These are the only bytes for which I have identified a definite use. If you know any others which are significant please tell ! "The "meat" of a BASIC program follows immediately after these 128 bytes.

STORAGE OF BASIC PROGRAMS (6128)

1.Line structure.

Each line starts with a 2-byte (L-H) record of the line length, followed by 2 bytes (L-H) storing the line number. The line is terminated with a 00 byte.

2.Line contents.

(a) Keywords. - represented by 1-byte tokens (>127)

(b) Operators - represented by 1-byte tokens (>127)

(c) BASIC functions (e.g. EXP or ABS) represented by tokens (<127) preceded by FF byte.

(d) Colon to separate statements on the same line - byte 01

(e) Constants :

(i) Single digit constants 0 - 9 represented by 1-byte codes &0E - &17

(ii) One byte constants - represented by &19 + the single byte value.

(iii) 2-byte integer constants - 3 different codes depending upon the way entered.

1. &1A precedes a 2-byte decimal value. (e.g. 705)

2. &1B precedes a 2-byte binary value. (e.g.&X110110)

3. &1C precedes a 2-byte hexadecimal value. (e.g. &CD19)

(iv) Floating point. This notation is used if the number is not an integer or if it is an integer outside the range -32768 to +32767.

Token &1F followed by the 5-byte representation.

(f) Variables :

(i) Variable without a type identifier (e.g. star) 0D 00 00,followed by the ASCII values of the name(last char.has &80 added)(star: 0D 00 00 73 74 61 F2)

(ii)Integer variable(e.g.bx%) 02 00 00 followed by ASCII values of the name (last + &80)(e.g. bx%: 02 00 00 62 F8)

(iii) String variable (e.g.A$)03 00 00 followed by ASCII values of name (last + &80) (e.g. A$: 03 00 00 C1)

(iv) Real variables (e.g.c!) 04 00 00 followed by the ASCII values of the name (last + &80)(e.g.c!: 04 00 00 E3)

(g) Line numbers (e.g. destinations for GOTO or GOSUB)

Token &1E followed by a 2-byte code (L-H) for the line number. During execution the search for this line number only occurs once. The line number is then replaced by the address of the start of that line and the token changes to &1D to indicate that this has happened.

(h) Program ends with three 00 bytes.

SHOWPROG uses very little of this information. The first line of each program will begin at location &8080, 4 bytes record line length and number, &8084 will hold the token for REM (&C5) and the text of the REM starts at &8085. The machine code to display this text is in the DATA statement 450 and is disassembled below. The only reasons for using machine code were that for data stored in this way it is easy to do and it is FAST.

```
LD HL,&8085      21 85 80
LD  A,(HL)       7E
INC HL           23
CP &0            FE 00
JR Z,&8F41       28 08
CALL &BB5A       CD 5A BB
LD A, &C6        3E C6
CP L             BD
JR NZ,&8F33      20 F2
RET              C9
```

This loads the address of the start of text into HL, copies the content of that address into A, Increments HL ready for the next pass through the loop, tests for the zero byte which would indicate that the end of statement has been reached and either leaves the routine or uses the firmware call &BB5A to display the character. The value of L is checked to see whether 65 characters have been displayed (more would spoil the layout of the display) and either loops back or RETURNs.

PRINTED CATALOGUES

It is often useful to have the contents of a disc printed out for reference. This printing could be of normal size, for keeping in a loose leaf folder, or a miniature version for keeping with the disc. Both are easily produced by using the program for reading a sector to read the directory sectors into memory and then extracting the program names.

These may then be organised for printing in a convenient form. The program SMALCAT will print a miniature version - depending on the response of your printer to line 50. On my printer, Citizen 124D, the codes are for condensed, elite, superscript, at 12 lines per inch. If your printer is Epson compatible the same codes may work - otherwise you will need to find

---

SMALCAT

```
10 REM program to print a miniature
   disc catalogue
20 MODE 2
30 SYMBOL AFTER 256:mem=HIMEM
40 MEMORY &7FFF
50 PRINT#8,CHR$(15);CHR$(27);"M";
   CHR$(27);"S0";CHR$(27);"A";CHR$(6)
60 GOSUB 260 'load machine code
70 L=1:d=PEEK(&A700):IF d =0 THEN :A
   ELSE :B
80 add=PEEK(&A91A+16*d)+256*PEEK(&A9
   1B+16*d):fsn=PEEK(add+15)
90 t=PEEK(add+13):spt=PEEK(add+16):
   p%=PEEK(add+2)-PEEK(add+20)
100 s=fsn:size=PEEK(add+7)+1:q%=PEEK
    (add+20):bl%=size/(4*(2^q%))
110 DIM n$(size)
120 POKE &9003,d:POKE &9006,&84
130 FOR q=1 TO bl%
140 POKE &9004,t:POKE &9005,s
150 CALL &8F00
160 GOSUB 300
170 s=s+1:IF s>spt+fsn-1 THEN s=fsn:
    t=t+1
180 NEXT q
190 FOR i=1 TO L-1 STEP 4
200 FOR j=0 TO 3
210 PRINT#8,n$(i+j);TAB(13*j+14);
220 NEXT j
230 PRINT#8
240 NEXT i
250 END
260 FOR m=&8F00 TO &8F21
270 READ x:POKE m,x:NEXT m
280 RETURN
290 DATA &dd,&21,00,&90,&21,6,&90,
cd,&d4,&bc,&dd,&75,00,&dd,&74,1,&dd,
&71,2,&21,0,&80,&ed,&5b,3,&90,&3a,5,
&90,&4f,&df,0,&90,&c9
300 FOR j = &8000 TO &81E0 STEP 32
310 a$=""
320 IF PEEK(j+1)=&E5 THEN j=&81E0:
    q=bl%:GOTO 390
330 IF PEEK(j)=&E5 THEN 390
340 IF PEEK(j+12)>0 THEN 390
350 FOR k=1 TO 8:a$=a$+CHR$(PEEK
    (j+k)):NEXT k
360 a$=A$+".":FOR k=9 TO 11:a$=a$+
    CHR$(PEEK(j+k)):NEXT k
370 n$(L)=a$
380 L=L+1
390 NEXT j
400 RETURN
```

the correct codes for the facilities from your printer manual.If you leave out line 50 you will get normal sized printing.

You may have realised by now that I like to get the maximum mileage out of any code I write - and this is, of course, further use of some of the code from SHOWPROG. One effect of producing a catalogue by this means is that it shows all programs regardless of user numbers. SHOWPROG does that, but will only LOAD or RUN a chosen prog. if it is saved with the current user number. This can be overcome with the following small amendments:

Alt:100 DIM n$(size),n(size),u%(size)
Add:355 ¦USER,u%(pn)-545 u%(L)=peek(j)

Trevor.

P.I.G.S.

This little snippet came my way recently from my Welsh "agent" at the University of Wales. It came off the "net" as you can see by the first few lines. <Ron Izett>

Article: 964 of aber.misc
Newsgroups: aber.misc
Path: aber!news
From: dgibbs@aber.ac.uk (Dave Gibbs)
Subject: Leaked POLARIS missile document
Message-ID: <1993Nov18.161348.25271@aber.ac.uk>
Sender: news@aber.ac.uk (USENET news service)
Nntp-Posting-Host: pcceij.ccu.aber.ac.uk
Organization: West Wales Software
Distribution: aber
Date: Thu, 18 Nov 1993 16:13:48 GMT

I've just received this leaked handout issued only to the top people in Britains defence force. I thought it contained information that the public ought to know.

EYES ONLY
Security Classification: CLASSIFIED

POLARIS A3 MISSILE INERTIA GUIDANCE SYSTEMS
This handout contains a brief but comprehensive description of the POLARIS missile inertial guidance systems, written in simplified terms to reduce any confusion that may be present and provide clarity.

Once ejected from the submarine, the missile knows where it is at all times. It knows this, because it knows where it was. By subtracting where it is from where it was, or where it was from where it is (whichever is the greater) it obtains a difference, or deviation. The inertial guidance system uses this deviation to generate a corrective command to drive the missile from a position where it was to a position where it isn't, arriving at a position where it wasn't, but now is. Since the position where it now is, is the position it wasn't, it follows that the position where it was is the position where it now isn't. In the event that the position where it now is, isn't the position where it wasn't, the system has acquired a variation. Variations are caused by external factors, and a discussion of these factors is not within the scope of this handout. A variation is the difference between where the missile is and where the missile wasn't, but should be. Variations can be corrected for by the inertial guidance system, provided the missile knows where it was, in addition to knowing where it now is and wasn't.

The thought process of the missile is as follows:- Because a variation has modified some of the information which the missile has obtained, it is not sure where it is.

However, it is sure where it isn't (within reason) and it knows where it was. It subtracts where it should be from where it isn't and by differentiation it forms the algebraic difference between where it shouldn't be and where it was. It is then able to obtain the difference between its deviation and its variation, which is called error. The missile also contains a computer.

Enlightening, eh?
Dave.
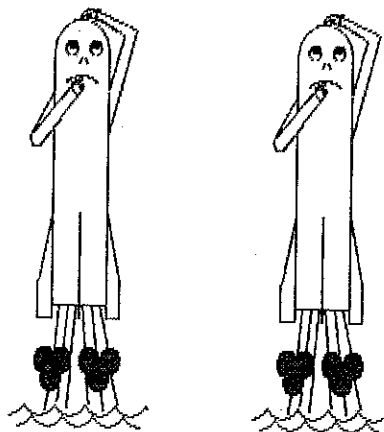
Dave Gibbs, West Wales Software, Unit 2, (Tel. +44 (0) 970 626001)
The Science Park, Aberystwyth, Dyfed, SY23 3AH, UK. (Fax. +44 (0) 970 626665)
Internet :- dgibbs@aber.ac.uk / Packet Radio :- gw7ovv@gb7swn (.#45.gbr.eu)

JOHN RIDGE MUSES ON TEACHING WITH A DYSLEXIC COMPUTER

This month's excursion into the past with WACCI takes us back to the month of April and the year of 1989. John Ridge was ruminating on the semantics of "Teaching Programs" versus "Educational Programs" and offering a variety of thoughts on the subject.

INTRO

I don't think there is any such thing as educational software. It is risky to lean too heavily on etymology but the word "educate" is derived from the Latin and strictly speaking means to bring up. On the other hand the word "teach" is pure Anglo-Saxon and means to impart knowledge or skills. Oddly enough it is cognate with the word "token", although that is a matter I won't discuss here.

EXPERIMENTING

Clearly, there must be some overlap but more than anything else the difference lies in attitude of mind.

In my opinion there are far too many educators in the schools these days, all busily usurping the right of parents to bring up their own children in their own way, or what is even worse, engaging in the damnable practice of using other people's children for experiments in social engineering. At the same time there is a dire shortage of what I would call genuine teachers. My purpose here is not to stir up that particular hornets nest of controversy, though, so let us hastily pass on.

A CPC NANNY?

The notion of a computer bringing up children is so ridiculous that I find the description "educational software" somewhat fanciful and much prefer to think of programs being designed to teach or to serve as teaching aids. They need not necessarily be written for children although I imagine most of them will be. At the last count I had nine

grandchildren, of whom six have possible access to a CPC computer at home. Two others have access to an IBM clone and one has her own Plus-4 machine, about which I know little.

Not unaturally, my thoughts have turned to the possibility of trying my hand at writing a teaching program or
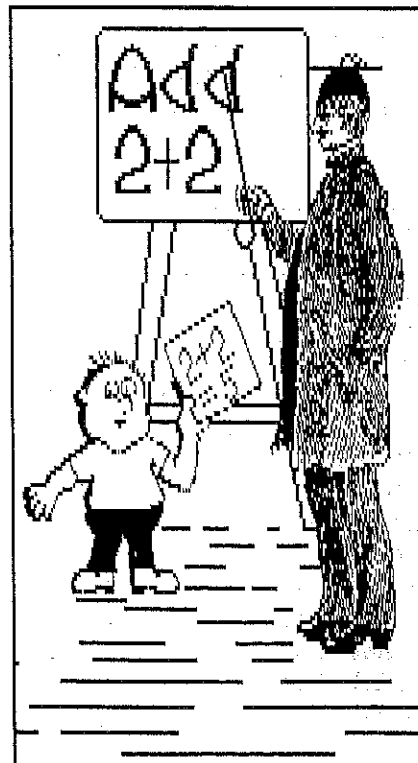
two, at least for those with access to an Amstrad CPC. What I would like to do here is to offer a few of my own ideas for your consideration in the hope that they will inspire some discussion and perhaps even lead to one or two teaching programs being written. It would not serve our

purpose to get bogged down in the quagmire of technical jargon which invariably accompanies any discussion of learning-theory so my approach will purely pragmatic. Think of me as a bearded grandfather who, although cuddly and lovable, is extremely wise sensible and down-to earth. *That description, now I come to think about it, fits me perfectly.*

ENCOURAGEMENT

I think the most important consideration, especially if a teaching program is intended for small children, is that of reward. It has to do with what is often called *positive re-inforcement.* For adults and older children, a sense of achievement or the realisation that a step has been made towards some distant goal is reward enough, but small children require the encouragement of something much more concrete and immediate. If an adult is present to heap praise on the child, well and good but if the child has only the computer, then that must provide the reward.

MINI SADISTS

I once wrote a version of Hangman in which the reward was an additional point to add to the score, and the penalty was a little man falling into a tank of water with a splash. I imagined a child would want to prevent the little man from suffering such a sad fate. I underestimated children's innate sadistic tendencies. The trouble turned out to be that it was a far more rewarding experience to see the man falling from a great height than it was to see the score increase by one. It paid them, therefore, to guess that a word should be spelt banbkjc. That was not my intention.

Whatever others may tell you, do not write programs for very small children

which require reasoning. Small children love rigmarole of any sort, whether it be a long list of animals chasing the old woman chasing the pancake, or their three-times table. What parent has not been driven almost to distraction by having to read the same story-book dozens of times in succession? But God help the parent who gets a single syllable wrong on the 59th reading. Small children learn by rote and they learn well.

ANGELIC CRETINS

One final point regarding programs for small children is that any temptation to be *"twee"* should be strongly resisted. Children obligingly humour adults who appear to favour little furry bunny rabbits but they don't go a bundle on them themselves. A furry stuffed toy is tactually pleasant and warm. A two dimensional representation is neither except by association in the adult mind.

Asking a child to type in its own name at the beginning of a program of this kind is always a good idea, and possibly its age as well, as children are always keen to advertise how *"big"* they are. If the child is beginning to be functionally literate then personalised messages may help considerably. Negative reinforcement by the use of messages reading, *"Angela my sweet, you are a 9 year old cretin"* and the like should be avoided I feel. The complications of using the SHIFT key to input the upper case letter at the start of a name can be bypassed by a few lines of programming. The correct use of *"capital"* and *"small"* letters should always be encouraged by example.

CALCULATED ERRORS

When my own children were small, I found that if I put on an act of bewilderment and confusion they were eager to rush to my aid. I might sit scribbling figures on a piece of paper, muttering to myself. Sooner or later someone would come to my rescue, explaining how easy it was and demonstrating the method of calculation. We would eventually find ourselves coping with problems that had yet to be touched upon at school. Instead of being hopeless at arithmetic, we discovered that we were really quite good at it.
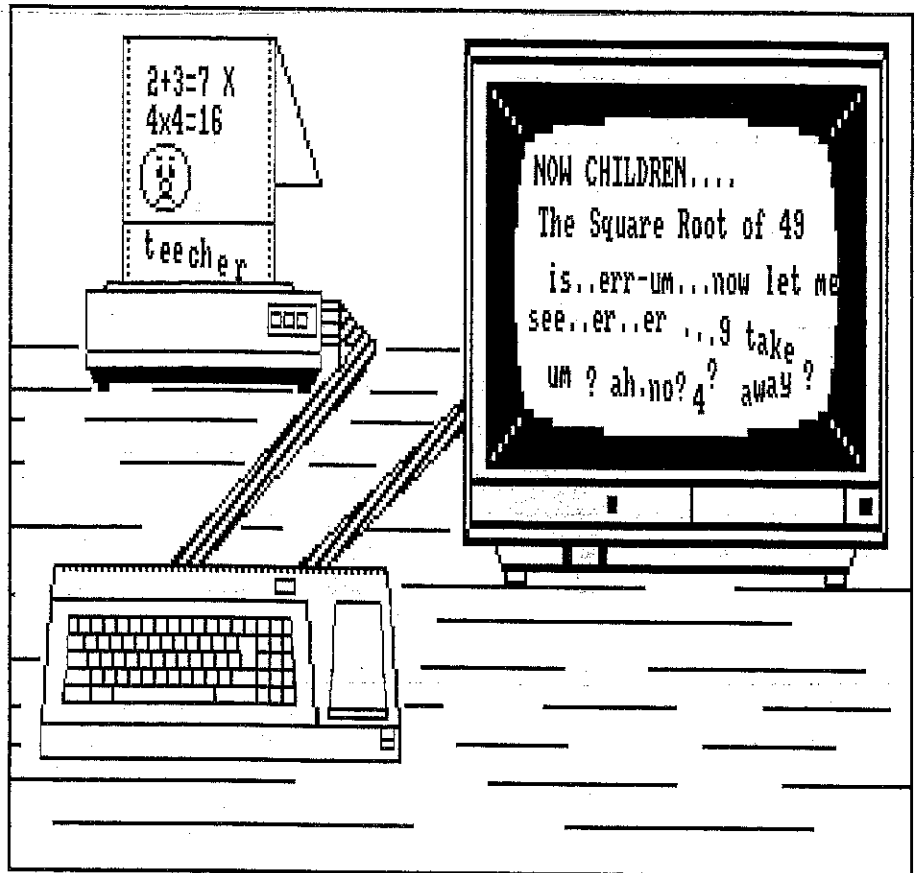
In a similar way, it might be useful to make the computer appear capable of errors which a child could gleefully pounce on and correct. The simplest way would be to get the child to say whether something was correct or not, perhaps with randomly generated errors which presented expressions such as $6x12=72$, $7x8=54$ and so on. But I am sure the machine could be made to appear subject to human fallibility in a much more subtle way than that and to arouse a child to a state of excitement trying to catch it out making mistakes. The quickest way to learn to play the piano is to start giving piano lessons, so perhaps the same principal holds when one starts to "teach" a computer something.
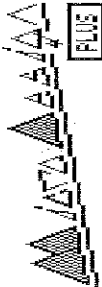
As soon as one begins to contemplate the possibility of writing teaching programs, all manner of ideas present themselves but it should not be forgotten that the aim is to teach, not just amuse. I said that we would not go into any theroretical aspects and neither shall we but the ground rules were all thoroughly explored long before the advent of home computers. It would be as well to visit a library and examine the literature on the subject of programmed learning, written when teaching machines were vogue. There is more to it than meets the eye.

Consider the question of whether minimal step linear programs ought not to have parallel sequences with different step-sizes commensurate with the degree of understanding as measured by the percentage of correct responses. Is it practical to introduce such sequences as branching programs with multiple choice questions? If the inability to deal correctly with questions indicates the need to cover some previous ground again, how is one to loop back without causing inevitable discouragement by boring repetition?

OUTRO

As for the use of a computer as a teaching aid, well, not being a teacher myself I have no idea what aids they require other than blackboard and chalk, a crib hidden up the sleeve when dealing with Latin conjugations and a good stout cane with a sting sharper than a womans tongue. Those pedagogues under whose regime I spent my formative years needed little more, but that was some years ago. *Tempora mutantor, non et mutamur in illis,* I suppose.