

# S I D E L I G H T

The journal for Torch users

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## EDITORIAL

May I start by thanking everyone for their congratulations and kind comments on our first issue. The problem now is to maintain and improve on the quality of the journal. I had hoped that producing this second issue would be slightly less traumatic - any difference has not been noticeable!

May I also point out that it does require more communication from members to keep the journal interesting. We have Goff Sargent and Bob Janes who, I am pleased to say, are both doing their bit in becoming regular contributors. We are still short of material, though. At present, the emphasis is on Perfect Software but there are far wider horizons which we should cover. If you are using non Perfect software, we would be interested in hearing from you. It is unlikely that anyone reading this can't make a useful contribution. This is your magazine and it requires you to keep it alive. Without your comments, views, tips, hints etc. the journal will become stale and die. I don't imagine that everyone would like to write a full length article but you will be surprised how easy it is once you start writing! The two part article on PFCONFIG started out just as a half page and just grew once I started writing and this is true of many subjects.

A number of people have referred to our high subscription rates. I will readily admit to this but with only a small membership, printing costs are exorbitant. The cost of a print run of a thousand is only two or three times that of a print run of a hundred. Being a pessimist by nature (at least I'm not too disappointed when the worst does happen!) I think it unlikely that we will be in the happy position of being able to reduce the subscription. When I have asked members if they would prefer any surplus to be spent on improving the journal/group or a reduction in subscriptions, the response has been a unanimous - "retain the current rates and use the surplus for the group" so this shall be our policy for the time being.

I did at one point (during a period of uncharacteristic optimism) say that we would make a small payment for published material. At present, we are running at a loss (in spite of the high subscriptions!) and are unable to do this. It does seem unfair, however, that most members do not submit material for publication. It would seem appropriate, therefore, that we show our appreciation for the efforts put in by our contributors.

Starting from our next issue, a contributor who sends an article which is accepted for publication will be able to choose either to have a credit for one quarter of the following year's subscription for each issue in which an article is published. This effectively means that you will receive any issues in which your articles appear free of charge. Alternatively, you may request a volume of your choice of public domain software to be copied on to your own disc free of charge. This only applies to library volumes which we have in stock. You may select a library volume that is not in stock for half price (currently half of £12.50 ie. £6.25.) To summarise:

Authors who have articles published may choose from:-

- (a) A credit for 25% of the annual subscription for each issue in which an article appears.
- (b) A copy of any single ex stock public domain volume free of charge on to the author's disc.
- (c) A copy of any single public domain volume which we obtain to order for (currently) £6.25.

This scheme is not intended to abrogate the majority of members from the bother

of writing an article. It is more an incentive and a small token of appreciation. I do realise that this is by no means a commercial return - but at least it's tax free!

Now it's apology time again. The poor quality of the first issue was a combination of us and a printer who had previously produced good work. This issue was printed by different printers and hopefully will be far better. I must also apologise if anyone received a page upsidedown or out of sequence. It wasn't until we had posted the first twenty or so that we spotted an issue with this problem. Hopefully we caught most of the faulty ones. The final apology is in case this issue is late. At the time of writing, we have slipped about two weeks but we could well make up this time.

I have at last obtained a second system and you will no doubt be hearing more of this in future issues. This should make life a lot easier. My wife will now be able to do her typing bit and I shall still be able to use the Torch. There will be other substantial benefits including the much delayed bulletin board system (BBS). More of this in the next issue, though. A more immediate benefit is that we can now offer members a disc format conversion service. We can translate from most CP/M formats to Torch but NOT Apple or Commodore.

The charge for this service is £12.50 for each Torch disc produced. Depending on the original format, there may be two or in extreme cases, three Torch discs for each original. Normally, there is only one. If you are not sure, send the disc plus £12.50 and details of the system it is from. We will let you know if it requires more than one Torch disc. It is not possible to list the formats we can copy from in this issue so if you require this service, either send your disc and payment and we will let you know or contact us first. I must point out that our all inclusive charge of £12.50 compares very favourably with commercial companies who normally charge about £25.00 all in. Of course we can only perform this service when it does not infringe copyright. You must therefore include a note which states that we will not be breaking copyright by performing this service. We can also copy from Torch format to most other CP/M formats. The exceptions are the same as above and so is the requirement for a note that we will not be infringing copyright. The charge of £12.50 is based on the number of discs which we produce. Depending upon the format there will be between one and four output discs for each Torch disc. Once again, if you don't know, please ask. Note that some CP/M programmes are hardware dependant. This means that when the programme is moved from one machine to another it may require installation - if in doubt, please ask. We can install programmes on to the torch but the cost will vary so please enquire. We are able to install software on some other systems and if you require this service let us know.

Our membership is slowly growing and I would like to welcome all our new subscribers. It is very gratifying to see our database slowly expand but it is double edged sword due to the time involved - another reason for any delay in this issue!

I have received several queries about the possibility of advertising in Sidelight. We are not currently able to accept adverts. In order to charge a rate which is realistic for us and the advertiser we require a larger circulation than we have at present. There is also the question of our time! Finally, because we have tried to keep our administration simple by use of a common renewal date, we can't anticipate the total print run in advance. None of these difficulties are insurmountable and we hope to introduce advertising in 1985. We shall be careful that this is not detrimental to the journal.

The backlog of mail is now very short and you should receive a fairly swift  
cont. on page 4



## HELP WANTED

It is becoming increasingly evident to me that if I am to retain my sanity, wife and job I must delegate some of the responsibility for producing Sidelight. Having previously attempted to run a group by committee, I am convinced that this is fine as a means of socialising but it is not a practical approach to produce a regular journal.

There appear to be two possible solutions. The first, which has been suggested by several people, is to have the group divided by geographical regions. I do not believe this to be a practical approach. Firstly because our membership is so widely dispersed, it would only be in London that people could get together and as we have many members abroad, they would not, of course, be able to gain any benefit. Secondly, I do not believe that any significant improvement to the journal would result and once again, from personal experience, I do not believe a significant proportion of members would attend meetings.

The second solution which comes to mind is to form special interest groups. This can result in a fragmentation of the group but I am sure that if managed carefully this approach could work to everyone's benefit. I do not, at this stage, propose to form separate groups as such. My proposal is that co-ordinators or sub-editors, (their title is of little consequence) accept responsibility for aspects which are of interest to them. I shall co-ordinate everyone's efforts in order that the journal/group does not become fragmented.

There is no reason why everyone who helps need work in the same way. Obviously, by being as flexible as possible in the way this is organised, people with widely differing levels of experience can all make a useful contribution.

I would suggest the following sort of split:

- (a) Perfect Software; this could be divided further into:
  - (i) Perfect Writer
  - (ii) Perfect Filer
  - (iii) Perfect Calc
- (b) Programming; this could be divided further into:
  - (i) BASIC
  - (ii) Assembler
  - (iii) Other languages as necessary
- (c) Torchnet
- (d) Torch business machines
  - (i) CPN/MCP
  - (ii) UNIX
- (e) Unicorn
- (f) Graduate
- (g) Software library
- (h) Other (CP/M) software

I have deliberately included some overlap in order to ensure minimum demarcation but there would not be any duplication of effort. The areas of interest are each manageable by a single person but there is no reason why two people should not share a single area.

Do not consider the above list to be definitive. There are many other areas of interest. How about communications? The Torch business machine and the Beeb upgrades with the Torch modem /software package gives lots of scope. If you

have an interest not covered and would like to help, still get in touch.

The most positive contributions you can make in your chosen area will be to ensure that there is suitable material on disc for each issue. I shall naturally give you as much help as you require. At the moment, I am only able to read briefly any articles contributed. This means that I rely on the author alone to ensure that the article is technically correct. So far, this has worked well but information should be checked by a second person because misleading data is worse than nothing. It would, of course, be helpful if you would also write the occasional piece yourself. Once again, I am open to any suggestions.

Grahame Perchick

#### EDITORIAL cont. from page 2

response to your queries. As always, an SAE will speed things up. PLEASE be patient if there is a hiccup in the frequency of issues of Sidelight. There is a tremendous effort required to publish any magazine and my wife and I both work. If I am obliged to work longer hours than normal, it always occurs at the most inconvenient time and can, of course, cause delays to Sidelight's publication - I am afraid that earning a living must come first.

Is there a programme which you would really like but don't know how to go about writing it? If so, providing you agree to contribute it to the Sidelight library disc, I would be pleased to guide you on your way. Drop me a line saying what you would like the programme to do and in which language you want to write it. Try to be as specific as possible in what you require it to do. If you can't be too specific, it will simply mean a few suggestions from me but they might not be quite what you require. An SAE, as with all queries, will encourage me to respond much faster.

The Sidelight library disc is slowly growing - thank you to all our contributors - but there is still a long way to go until it is filled! So please keep the contributions coming in.

If you have used a lorchnet or hard disc system, how about a review or warnings of any pitfalls? I have no experience of either and so must rely on members to provide this information. We now have a few members with these systems and the hard disc particularly is of interest to many of our members.

We now have numerous members who own and use BBC BASIC 180. Any comments, hints, tips or programmes for the Sidelight library disc will, therefore, be useful to many members especially any who are considering the purchase of this package retrospectively.

May I finally remind you to sit down and write that article you've been thinking about. Please remember to use the last three digits of your membership number as the extension to the file name. (This applies only to articles / letters and not to items for the library disc which should be given an appropriate extension.

Please feel free to contact me before you write an article in order to avoid duplication. The best approach is to send me an outline and when I reply, I can give you an idea of deadlines and answer any other queries.

Grahame Perchick

## TORCH REPLY

*Following the first issue of Sidelight, I received eight pages of comments from Mark Cook. I would have liked to publish all of it but have had to trim it down to what (I hope) will be of most interest.*

Working in TORCH customer support and being a 'private' TORCH Disc Pack owner, I eagerly read the copy of Sidelight which you kindly sent us. Having carefully studied this issue, I would like to make a few comments.

To put the following remarks in perspective, I am responsible for Perfect Software support and at present we have a large number of letters concerning Perfect Software. As a result, although I do reply to everyone eventually, some of the responses take longer than I would like for which I apologise.

Having said that, here are my comments on the views and features in Sidelight:

### Page 2

BBC ROMs that I am aware of that produce known problems are the Computer Concepts Graphics ROM (puts the machine into their 'MODE 8' on power up and after BREAK is used but otherwise has no ill effects as far as I know) and Watford DFS (versions before 1.3 have very strange side effects, 1.3 clicks the disc drives once on power up or on entry to MCP. This means you must have a disc in the drive at these times otherwise the system will hang up.) Also, some early versions of the new Acorn DNFS ROM don't seem to be working properly. The Micronet ROM can cause problems if it is nearer to the edge of the board than MCP. (If MCP is in the TORCH recommended place, this will not happen.) I operate Micronet but always load my software from disc - it loads almost as fast. Naturally we would be pleased to hear about any other ROM incompatibilities. Remember that before running any BBC software or any ROMs MCP users must do a <B> and <BREAK> to switch back to BBC Computer mode otherwise the ROMs will clash with MCP which is left active if a BASIC command is done. Finally, as a matter of interest, MCP is known to work correctly with the Solidisc sideways RAM unit.

### Page 5

Mr. Glaser has had a series of problems..... he now has a working system. The February issue of Acorn User actually said not that TORCH were anglicising the Perfect Software but that Perfect themselves were. This highlights an important point - we are reliant on Perfect Software supplying updates and if they do not produce the updates we are unable to do anything with the software itself. We have done our best to improve things with Issue 2 Perfect Software and continuing updates and extra 'How to' notes/documentation to dealers but that is really all TORCH can do. Finally, I would also be interested to hear what TORCH Basic is.

### Page 6

In answer to Mr. Hillesley, Perfect Calc has a known problem with replication (documented in the new Issue 2 addendum and in notes sent to dealers in March) which sometimes means that after answering the 'Relative...' questions it is necessary to enter ESC-Y again to actually replicate the formula.

### Page 7

We are aware of the problems with the Perfect Software manuals (hence the introduction of the Issue 2 addendum and the notes we send regularly to dealers.) Many dealers have not yet mastered Perfect Software in its entirety

(I'm not even sure I have yet) although we have encouraged them to do so.

Page 7

I am sorry that we could not be specific in our reply to Mr. Holt about statistical software. This points to another common problem that we have. It is a full time job for the people in support here at TORCH to keep up to date with all the TORCH products (UNIX, MS-DOS and CPN/MCP operating systems, communications software, utility programmes, Perfect Software, BBCBASIC, DFS and MOS and much, much more.) Learning the hundreds of CP/M applications packages available that can run on the TORCH would be an impossible extra burden. For information on these we have to rely on our third party software suppliers. A list of these can be found in our Software Catalogue supplied free with all TORCH systems or available from any of our dealers. Be warned that COPIER cannot transfer software on Acornsoft and other copy protected 40 track discs. These have to be returned to the original suppliers for an upgrade so the best policy is to buy in 80 track format whenever possible. The varying screen mode problem sounds like a paged ROM having undesired effects.

Page 8

Apologies to Mr. McInnis - his letter was accidentally posted addressed to N.Y. rather than N. Yorks. and was sent to the USA first. On checking our files, I found that we did, however, send him two more letters and have always replied to his correspondence. His main complaint seems to be that Perfect Software was not supplied with his system (which according to the other correspondents may not be such a great disadvantage after all!) This points to another common question which TORCH get - "Can I have the software you are now sending out free?" The simple answer is no. If we upgrade one user free we have to update all 10,000 and if we did this TORCH would go broke in a week. As a matter of interest, I bought my Z80 Disc Pack in November 1982 long before I became a TORCH employee. There was no free software and no proper manuals and I even had to fit it myself because there were no dealers in Essex at the time. Now I could have bought my disc pack for nearly half the price with proper manuals and loads of free software but I'm not complaining - I still think the Torch Disc Pack is an excellent addition to my BBC Micro. If you can find a computer company that treats its users any differently to TORCH with this matter I would be interested to hear about it.

Page 9

In answer to Mr. Evans, CPN 0.72 has nothing extra for BBC Micro owners. The only changes were improved hard disc support for TORCH business computers. As a result it is not necessary to upgrade. The 'Swapping' problem is one I have not come across before. If Mr. Evans contacts his dealer or us we will try and sort it out. Finally, the corruptions of Wordwise text are probably caused by using BASIC and not B + BREAK to go into BASIC mode.

Page 10

TORCH do reply Mr. Robertson. I can find no trace of your letter in our files but you are welcome to contact us again. Any packages bought from suppliers in the TORCH Software Catalogue are directly compatible with TORCH. Note that to go into BASIC from the CPN operating system BASIC followed by BREAK is required. All programmes should work in DFS provided CPN 0.71 is fitted. If you have a version of CPN (not MCP) previous to this TORCH will exchange it for the current version free of charge.

Page 11

In reply to Mr. Mapletoft, ROM expansion boards are a problem because they take a lot of room inside the BBC Micro and may cause overheating with the Z80 card also inside the case. My personal suggestion is to use a Solidisc sideways RAM

board which sits up the side of the BBC case and takes very little room. I know of two people using this system with no problems at all.

Page 13

What's a tea break? I don't ever remember having one.

Page 14

Perfect Software training is available from MKA Training Ltd (telephone 0905 612141)

Page 15

The name UNICORN was originally derived from 'UNIX for Acorns'.

Page 18

The reason PWCONFIG was never distributed was that TORCH did not receive it. It would have made life much easier for me if we had.

Page 24

The reason SHIFT duplicates the key codes is that some versions of the TORCH operating system do not allow SHIFT and a function key to be detected.

Page 33

Although I have not tried it, I am told that the Juki 6100 is Diablo compatible and should work with the Diablo definitions already set up in PFCONFIG. It is worth noting here that unless users share their successes as well as their failures with printers it is very difficult for me to coordinate details about what does and doesn't work. We are always pleased to help users with problems (even those offering substantial sums of money). Perfect Calc requires no translation and Perfect Filer has no special printer definitions.

Page 35

The 'MailMerge' function is part of Perfect Filer and is described fully from page 43 onwards in the Perfect Filer manual in the Generating Mail section.

Page 36

The Issue 2 addendum should also be included in the list of manuals. There is a new and considerably improved ZDP guide coming later this year with (among other things) a much expanded DFS section with proper descriptions of all the commands. It has been specially written for BBC Micro users and pre-release copies have already been tested on some 'real' users. The User Guide and System Guide were a temporary measure supplied to early purchasers before the ZDP User Guide became available. The ZDP guide has been supplied with new systems for well over a year now and contains an amalgamation of the BBC Micro relevant information from the TORCH computer User Guide and the Systems Guide.

Page 46

TORCH recommend double sided, 80 track, 96 TPI made by Scotch 3M for Mitsubishi disc drives and by BASF for BASF disc drives. The BASF drives have a push button to load and release discs from the drive.

Mark Cook (Torch Technical Support Dept)

## TUITION

John Vogler tel. Leeds(0532) 661885 offers courses on Perfect Software or Sage. Groups of five or six may attend at one time on a Saturday or Sunday. The courses which will include lunch will cost approximately £30.



## LETTERS

### PW AND WS REVISITED

Congratulations on your first issue. I found it generally useful and interesting but I wonder why you printed the article entitled 'Perfect Writer/Wordstar'? The author has a strange viewpoint and does not appear to compare like with like. Three quarters of the article is a diatribe over the failings of Perfect Software with few constructive comments and no useful information for other users.

Two blunders in the article are (a) mailing is described in the Perfect manual and (b) WS does have a word count feature in Spellstar - it gives the total number of words used and the number of different words.

I purchased my system with what must have been one of the first Perfect packages. I did so, aware that there would as always be difficulties as an early user. The major problem seems to be the documentation which does not fully cope with the Torch. Sidelight seems to be pointing us in the write(!) direction, though! Having said this, however, one finds it difficult to accept that the software is 'free'. Surely it is simply included - at a discount - in the selling price. Torch should therefore act in a responsible manner and support it more fully.

For the elucidation of your readers, may I make the following brief comparison between PW and WS.

One must first point out that PW and WS would find their main uses in slightly different areas. WS is probably most suited to writing letters, informal reports and books. On the other hand, PW is well suited to writing formal reports - when the automatic numbering of paragraphs and index generation come into their own.

The major differences in facilities are the split screens and multiple buffers of PW which are excellent. The fact that WS displays the document as it will be printed is a most useful facility. WS is also rather more user friendly which makes getting started very much easier.

Two good features of WS are the ability to mix two character sizes - on one line, still justifying correctly and the four 'user definable' functions. I would be most surprised if the Perfect people had not been familiar with a WS type package but what would have been the point in simply copying it?

Finally, there is nothing, essentially, that one may do with either which cannot be performed with the other. The difference is that certain functions are actioned swifter and simpler with one or the other.

RONALD JACKSON (LEICESTER)

*Thank you for your constructive criticism. Ed.*

### FIRST ISSUE TOO CRITICAL?

I am concerned that the general theme of your first issue is to criticise the Perfect Software that was, in most cases, given away free with the Torch disc pack. What do your readers expect to get for nothing - the moon, it seems.

The Perfect package contains five separate programmes (counting Perfect Formatter and Perfect Printer as one). Each of them has strengths and weaknesses but it would have cost much more to buy Word Star, Spell Star, Mail Merge, Visi Calc and Card Box to achieve the same ends. Of course it takes some effort to learn the idiosyncracies of all this software - what do you expect - spoonfed freebies!

When they get past the complaints, most of your correspondents acknowledge the superiority of the Perfect Software. Though you have to be careful in comparing software for a Z80 with 64k of memory with products designed for an IBM PC with 640k.

So - stop knocking the software - knuckle down and invest some time in learning how to use it.

BOB JANES (TWA IN FLIGHT)

*I did ask for Bob's opinion! But is the software really free? Ed.*

#### A PRINTER'S DILEMMA

Our present system comprises a BBC plus Torch Z80 Disc Pack interfaced to a Canon AP500 Electronic Typewriter connected to the RS423. The Canon interface is supposed to allow the typewriter to communicate both ways but we're still having too many difficulties with one way traffic to try it at present! We have on order a KAGA/TAXAN 910 Printer, on the grounds it is quicker (much) and quieter (we can leave the ear muffs at work), plus a Torch Unimail modem/software package (well it should be fun).

For serious work, though, we are about to run the SAGE Integrated Accounts and Payroll packages - any comments? As explained previously, we are not computer experts but have an interest in making it work as well and as productively as possible. The kids play the games although it has been known.... any good adventure games been written for the Torch - all that memory for colour graphics. Really though, isn't that the biggest disappointment that nothing seems to exist which really exploits the Torch's potential.

Our specific needs are for software for print quoting/job costing plus planning if possible. The suitability of interfacing the Torch with a Typesetter is obviously a question. Perhaps a more immediate gain from a User Group would be the ability to learn from each other's efforts in getting the most out of the Perfect Software set.

Hoping your efforts will start shedding some light.

JOHN MORTON (HAMPSHIRE)

*Does anyone using SAGE on a Torch have any comments? The advertisements certainly claim that it is a versatile package - is it?*

*The reason for lack of Torch specific software is the relatively small user base. If I were writing software for retail sale I would no doubt join most others and write it to be PC compatible. This is obviously a purely commercial view. There are some packages which Torch sell that do go in the right direction but generally one can't deny there is little software which allows us to use the full potential of the Torch.*

*I am not aware of any other members who are printers but if anybody can help with recommending or otherwise the asked for package, I'll be happy to pass on*

their comments.

Likewise, if you have successfully linked a lorch to a typesetter you may be able to warn of some of the pitfalls. Ed.

### JUKI "£" PROBLEMS

I have been using Perfect Writer for a short while and am currently writing a thesis for my work. I have Issue 2 (which uses the delete and cursor keys properly) and have been trying to configure the JUKI 6100 printer for it. Most of the parameters of the Diablo PS printer are identical (ie. Proportional spacing ON and character width table 2). What I cannot get it to do is print out the pound sign, which produces ASCII code 96 from the BBC keyboard. I have a 12-pitch print wheel in the JUKI which gives a superscript o instead, the "degrees" symbol :

The PFCONFIG file gives, as you know, the option of translating characters on output and one can therefore specify that ASCII 96 should produce something else. The JUKI manual states that the code ESC I should produce the pound sign, but how does one enter the ESC code? Pressing the Escape key doesn't work (although it does work when specifying codes for bold and underline type) so I am a little baffled. Help, please.

SIMON BROWN (LONDON, E.13)

I passed Simon Brown's problem over to John Taylor-Byrne and his reply is printed below. Ed.

Thank you for your letter requesting information about the juki printer. The way the Juki deals with the "£" symbol is an odd quirk (as well as having a 1 for the number one!) but the problem is not too difficult. (Although in solving this one, a new problem emerges!)

The way to get the Juki 6100 to print the "£" character is to use the hash key (top row of black/white keys, the fourth from the left). This does print the "£" symbol, but does not enable you to print the standard hash symbol - which is annoying at times. I haven't as yet delved into whether Juki or some other daisy wheel that fits the Juki will do both. If it becomes a problem, then I will no doubt do so.

You may be interested in the PFCONFIG details I have implemented with my Perfect Writer interfacing with the Juki printer having a Multimatic single-sheet feeder attachment. I detail the PFCONFIG items with the corresponding entry.

1. 21590 micas	2. 38080 micas	3. 212 micas	4. 423 micas	5. 21
6. 53	7. NO	8.	9. NO	10. 0 micas
11. 2	12. YES	13. YES	14. YES	15. 1
16. NO	17.	18.	19.	20. ^M^J
21. ^IW	22. ^E&	23. ^IE	24. ^ER	

John V. Taylor-Byrne (Eastbourne)

When passing on John's reply to Simon, I added a suggestion that a different daisy wheel might solve his difficulties. Ed

Firstly, thank you for your prompt response to my membership application and

for the answer to my question regarding the pound sign on the Juki 6100 printer from Perfect Writer. Unfortunately that problem is not yet solved as I shall explain in a moment.

A word about myself. I run a Medical Photographic Department in a London teaching Hospital and I have been using a Z80 Disc pack running dBasell for several months. I also write a fair amount, both lectures and papers for publication. I had my own BBC at home with View fitted and for an average letter or a short paper this was adequate. Exploring Perfect Writer however, convinced me that I need a "virtual memory" system such as this for a thesis I was about to write for a further qualification. I therefore purchased a second Z80 card for my Beeb at home and invested in a pair of double-sided Teac drives. I did NOT go for the whole Z80 disc pack as the Torch drives at work had proved a little unreliable and cost £136.00 for the last replacement drive which was fitted. The Teac drives have performed faultlessly.

If I may chip in with a couple of points which were raised in your first issue of Sidelight - overheating IS a problem and this can be coupled with severe overcrowding if one wishes to fit a ROM expansion board as I did. I now have my Z80 cards housed in RS Components boxes which sit alongside the BBC, the ribbon cable coming out of the computer and doing a right-angled flip to plug into the box on the right. The Torch card itself does not get particularly warm at all in this position and certainly the BBC itself runs a little cooler.

I wish Torch had put the B-BREAK command into the original blue ZDP handbook! It took me ages to work that one out (by chance!). Recent purchasers will find that it is included in the orange ZEP100 handbook. Readers may also be inclined to use the \*FX12,4 command in a BEGIN.SUB file which will speed up the cursor operation considerably. Don't be too heavy handed with the Delete key, however, as you will erase more than you bargain for!

Now to the problem with the Juki. I have been using this with View for quite some time and have used a printer driver available from Amurtec software. This enables bold and underline as usual and proportional spacing. One neat device though is that the pound and hash keys work as they should, provided that the DIP switches are set for American characters, i.e. 4,5 and 6 should all be ON. If one uses the USA set with Perfect Writer, the hash sign prints OK but the pound produces a "degrees" symbol, a little superscript o. The thin blue manual which I got with the Juki stated that the pound sign can be obtained with the USA character set with the ESC I command - this is confirmed in the later edition to the manual which is altogether a much more comprehensive item. As you know, one can alter the character translation tables in PFCONFIG which I tried to do, attempting to get ASCII 96 (the pound sign) to produce ESC I. No way. I finally contacted Torch who confirmed that Perfect Writer will not allow ESC codes to be put into the character translation tables. Shame, but apparently true. If anyone CAN come up with a solution I would be extremely grateful to hear of it. A different daisywheel, incidentally, is not the answer. As far as I can tell, all Triumph-Adler wheels have the same characters in the same positions.

It is important, however, if one wants proportional spacing with Perfect Writer, to use a proper PS wheel. You can get away with it to a certain extent but unless one is prepared to define the width of every single character (in micas) for each wheel, the correct wheel is essential. See the printout of this letter!

Another item which the new Juki manual brings to light is the printer

initialisation code which is ESC SUB I - this can be put into the PFCONFIG program with the sequence ESC,CTRL-Z,I which should appear as ^J^Zi on the screen. And those users who, like me, are getting fed up with the exorbitant prices of carbon (single-strike) ribbons for the Juki, may like to know that Unistat, Unit 92, Cannon Court, West India Dock, London E14 9SU can supply them in packs of 6 at a very reasonable cost. They are identical to the IBM 82 Composer ribbons - to be totally sure, send a used sample, but you will find they are excellent ribbons and well-priced. No, I don't have anything to do with the firm!

Congratulations on the first issue - very readable and well-packed. I look forward to the next one.

Simon Brown (London)

The drives used by Torch have generally proved to be reliable. Even being in touch with so many users, I have come across only two or possibly three people who have experienced any failures. The usual difficulties are solved by using 3M 747-0 discs and only closing the drive while it is running. This is achieved by typing \*DIR before closing the drive.

Tony Glaser who uses his system at a temperature of 'a constant 80 - 90 degrees' says that overheating is NOT a problem. And so the discussion rages on! Seriously though, perhaps Tony has hit the nail on the head when he suggests that the TDP should not be placed under the Beeb. I tried this arrangement and found it most inconvenient. My TDP sits on a shelf above and behind the Beeb. Although it is all in a cupboard with rather poor ventilation, I have had no problems.

The Juki problem seems to be caused by use of the USA switch settings. There is a relatively simple solution - if you are able to write a short assembler programme. The technique is to intercept any calls to the printer. The code sent is examined and if it is the one which causes the trouble, it is expanded into the relevant escape sequence. The main pitfall is the possibility of the code in question appearing in an escape sequence itself, in which case, of course, it must not be expanded.

The programme may reside in the Beeb or Torch memory. From past experience, I would not recommend use of the MOS vectors for intercepting printer messages. The Torch software uses a large part of the Beeb's memory and initialises unexpected items. The result is that there is always a danger of the intercept programme either being overwritten or locked out. The other reason is that it would either have to be loaded from a Beeb disc which can be inconvenient or poked into Beeb memory from the Torch which adds complications. The simplest method should be to locate it at the top of memory in the Torch. It would have to be loaded before PH, a submit file could perform this, when it initially runs it relocates itself to overwrite the CCCP and changes the warm start jump to a new location immediately below the intercept programme. This is to ensure that PH does not overwrite the intercept programme. There must of course be a jump to the warm start at the new address pointed to from the normal warm start jump. When the jump address has been changed, the intercept programme should return to CPH. This will allow the submit file to continue by loading PH. There are several variations on the details but the end result must of course be the same. Ed.



## THE CASE IN QUESTION

While using my Z80 Torch, hoping to do some programming, I purchased a book called 'Programming the Z80' 3rd revised edition by Rodney Zaks. To my surprise, the programmes listings and commands did not function. My dealer says it needs an 'Operating System' programme available on disc but does not come with the Z80 Torch disc Pack, if so, why isn't it built in? Is there any possible way how I may obtain this programme or receive a copy.

During my visit at the 'Electron and BBC Micro User Show' at UMIST, Manchester, at one of the stands, I notice a BBC metal case having matching texture on a separated keyboard linked to double disc drive containing BBC processor etc. in a larger metal case. The price range which includes a pair of cases is about £75. The dealer on the stand said it would be possible to use this case on Z80 Torch Disc Pack with BBC Micro as drawn in the diagram, making it look more like a business machine and expensive.

This case looks attractive and useful providing a stand for a monitor, reflecting radio waves and other interferences and most important, providing a lot of space for expansions inside the computer. I would recommend you to mention this product to other Torch + BBC Users. Unfortunately, I have lost the address of the dealer and desperately wish to purchase the case. Therefore, I would be most grateful if you could obtain the address of the company for me as I have rung up most of the hardware companies I know but not succeeding.

At present, it would now be possible for owners buying Z80 Torch Disc Pack to receive 4 perfect software free, but unluckily, purchasing the Z80 Torch too early I did not receive this software and wondered if it would be possible for you to supply me with a copy please.

In the past, I received some information about software which is compatible with Torch called 'T.L.O.' (The Last One). I think it's a programme that writes programmes...? The only problem is how much it costs to get it working. One dealer says I need to buy TLO and MBASIC language, another dealer says just £330 and MBASIC is not needed and another dealer said it will only work on CP/M machines. How much does it really cost to get it working is the question I put forward.

HENRY WONG (NORTHWICH, CHESHIRE)

You do not need an operating system for the programmes from Rodney Zaks' book. There already is one - it's called CP/M! I would suggest that the problem is most likely to be your use of the assembler or debugger. Have any readers who have tried Rodney Zaks' programmes any helpful suggestions?

Henry included a sketch of a very stylish, sloping detached keyboard case with the Beeb in a case about twice the height of the TDP case. It looks a very practical arrangement and should help prevent any overheating problems. I have seen an advertisement from UCC of Bradford Tel: (0274) 390114 for similar cases but the cost is £149.00 a pair. If you are using a Torch power supply make sure any alternative case will accommodate it. As this does not seem the case Henry is looking for, can anyone help?

Sorry, the only way to obtain Perfect Software is by paying the (I think) rather high retail price. If you really want the whole Perfect suite, the cheapest route is to buy the ZEP 100 card, keep the software and try to re-sell the card. There is nothing very special about the Perfect Software though, so

you should consider your requirements very carefully. If you only require one or two of the packages, you may be better off with eg. Wordstar, Spellstar, Cardbox or Supercalc. These all have excellent reputations and operate satisfactorily on the Torch.

The Last One does require MBASIC. It does not write just any programmes, though, it is used to write database programmes. It is supplied for Torch systems by MPI phone 01-591 6511 Ed.

#### UPDATE FROM GOFF

Point one: You will find my BEGIN.COM sets up COPY to delete forward, and not backward as I've suggested, unlike the SUB version of the routine. This is because it is the routine I use myself, and, by the time I came to write it, I had gained access to CUSTOM.COM. If it's really worth it, I'll happily provide the reverse configuration. (Indeed, I'll happily encode anyone's version for you. Simple OSCALLs are a piece of cake to do.)

I, too, have come across version 2 of Perfect Writer, which overwrites BEGIN.COM redefinitions. However, we have bought several copies since, and they seem to have dropped this feature. Could it be that we've been buying old stock? (although CUSTOM.COM is included.) Or have they reverted because you're not supposed to tamper with copywrite software for sale? (Or, as seems more likely, are Torch just trying to keep us all on the hop.)

Incidentally, my personal CPN machine will auto-boot a BEGIN file from a B<BREAK>, I've discovered. I've tried a couple of MCPs, and it doesn't work on them.

Point two: I've noticed that the Unicorn hard disc system does not always behave as other MCPs, so my remarks in my Beeb article may be misleading. In particular, not all \*star commands to the Acorn DFS work from MCP. Although most do, \*LOADING a BBC file results in activity, but no load. I am particularly distressed by this, having recently written a Multiple Choice Questions programme for the Beeb, in which screens of information are sequentially \*loaded. It occurred to me to write a simple FORTRAN routine for the Torch to access the same questions, held on a BBC disc, that the students will use on their BBCs. The idea certainly works on a standard CPN or MCP, but not one operating the hard disc system. A return from BASIC using the command \*MCP similarly will not work.

Additionally, although what I have written still holds, the easiest way to get from MCP to a proper, working, 6502, disc filing BASIC is as follows: \*B;B<BREAK>;<BREAK>.

(Incidentally, Perfect Speller does not work well on the hard disc. When it comes time for it to look up its dictionary, it automatically takes a peek at drive A:, just to see if there's anything relevant there. Normally, of course, there is. But, with the system based on logical drive B:, unless there's a floppy in A:, this behaviour generates an error and the programme fails!)

GOFF SARGENT (LOUGHBOROUGH, LEICS.)

I'm sure Torch will have some comments to make on this one! Ed.

## NU OVERHEATING

Let me first mention a few hints and experiences which you may like to publish as little sidelines perhaps, and then a few problems which maybe other people might be able to help with.

1. Re my letter on p.5 of Sidelight £1. The Watford DFS is supposed to boot up with drive A of the IDP running (according to Watford - tho I find it hard to believe!). Apart from this quirk it seems it @UX[is] quite compatible with the IDP, tho I have now got an Acorn DFS as well just to make sure!
2. Torch were eventually very helpful to me - like the member in Yorkshire whose letter from Torch went to the USA, mine went elsewhere too (or so they say).
3. A serious bug appeared in my Perfect Writer - any files more than about 7 pages long became corrupted whenever I saved them! Torch replaced my PW disc with a new one (issue 2) which solved the problem - anyone else with long files filling up with junk might have the same problem.
4. Issue two of PW seems good - especially the little white booklet ("Perfect Software on Torch Computer Systems") which details some of the various errors in the Perfect documentation and some of the quirks of the software.
5. Re RDACORN: The documentation and the program both say that the Acorn format disc must be in drive A, and the Torch format disc in drive B, or they may be corrupted. In my version at least (version 1.7) the discs have to be the other way round, as I discovered after losing a few discs.
6. Re ROMs. I use the ATPL sideways ROM board with no trouble - it fits fine with the Z80 board if you move the latter so it lies lengthways (ie. from back to front) along the Beeb rather than sideways. I have no overheating problem at all, in spite of constant 80-90 degree temperatures and humidity in the West Indies - but I do not put the disc pack itself under the Beeb. I also think the Z80 board should be mounted in a much firmer way - those sticky feet should make Torch ashamed! I have Acorn and Watford DFSs and Disc Doctor and all seem to work fine with the Torch (I type W-BREAK to access the Watford DFS, otherwise the Acorn is default).

Now for my questions/problems:

1. It's great to be able to use the delete key properly with the help of PWCUSTOM.COM as provided with issue 2 Perfect Writer. But PWCUSTOM also defines all the other function keys, some in a less-than-ideal way. Does anyone know how to define f-keys with PWCUSTOM present, or how to use the delete key properly without PWCUSTOM? (F-key functions using CTRL and CTRL-SHIFT can still be programmed with a BEGIN.SUB program, using \*FX227 and 228, but straight f-key and SHIFT-f-key functions can't. And whereas without PWCUSTOM we could program any functions we wanted, we are now limited to a poor choice of the misdocumented "FUNCTS.TXT" ones listed on pp.352-361 of the PW manual, as Goff Sargent pointed out in his article).
2. Paul Goodenough and Goff Sargent have told us how to use logs on dbaseII - could they tell please us how to configure dbaseII for the Torch in the first place?? (I think Perfect Filer is appalling!)

3. RDACORN will copy into torch format a Basic program which has been SPOOLED as a text file - when this is done how can one turn it back into a program file so that it can be run?

4. Has anyone noticed that if you are writing a letter at your desk any civilised person would not stand and read it over your shoulder. But write the same letter on a computer and the same person feels free to read the VDU to their heart's content. Let us see a clever programmer find a way to blank out the screen while writing a file in PW! Save and Exit take too long...do I just have to resort to turning the brightness on my monitor right down?

5. Is it possible to get PW to start its page numbering somewhere other than page 1? (I want to write a 400-page book on PW, but to put it all on one file would be ridiculous!)

6. If you lose a PW text file (eg a .MSS file) but still have the formatted (eg .FIN) version, how can you rescue the text for further editing? I know the text is still there but if you try to TYPE it all you get is a two-line label message.

TONY GLASER (WEST INDIES)

RDACORN version 1.7 works satisfactorily on my system and I have not heard from anyone else with a similar problem to yours. It might be that you have a faulty copy of RDACORN.

KEYBOARD on the Sidelight Library disc will allow you to change the use of the function keys. This is not the complete answer, however. If you really want to use your own function key definitions on PW version 11, we must wait for someone to tell us how to patch across this part of PW.

When you have your spooled text file in Torch format, you must edit out the rubbish at the start and finish. Then run CONVERT as supplied with BBCBAS1C280. Note that the file you are converting from must be \*.BAS and the file you are converting to will be \*.BBC.

Your fourth question is one that has frequently caused me difficulties. I have tried a large notice on the top of the VDU but this seems to encourage people. Possibly the answer is a sheet over yourself and the monitor but watch the ventilation holes don't get covered. Can't anyone come up with a more practical solution?

There is a short article, "Not the Beginning" elsewhere in this issue which explains how to cope with long items split into several files. They can even span more than one disc.

The only suggestion I can make to recover a FIN file is to copy it to a disc file when (or instead of) printing it. The snag is that you will have a new problem of justifying it if any changes are made. A BASIC programme to remove all but one of the spaces between the words should get you most of the way there. You will require some adjustments, though, because you will lose the style commands. The simplest answer is take more care of the MSS file!

Tony included with his letter a list of CP/M user groups. They are our main sources for public domain software.

Any member's help will be passed on to Tony, Ed.

## PERFECT FILER.

How to make *Perfect Filer* work on your *dBÜ-Torch*.

*Perfect Filer* is probably the most straightforward of the *Perfect* software packages; typically, the *Torch* adaptation has made things more than a little difficult. There are two main problems, both of which can be dealt with fairly simply; but first, a short description of the package.

### What will it do?

*Perfect Filer* is a computerised card index system; each card is represented by a screenful of text and data. It will do most of the things that you can do with a card index - including those that you would need to shuffle or sort the cards to achieve. There is also a reasonable report generator, and capacity to write to a *Perfect Writer* file if you need more power. You can also work in reverse and use some of the power of *Perfect Writer* to produce form letters including data from *Perfect Filer*.

There are several things that *Perfect Filer* cannot do:

- it won't calculate anything (though it can be made to count and do some simple date and numerical comparisons);
- you are limited to one screen per record;
- it will only work with one file of data at a time;
- you can't use if...then structures, though you can use several status indicators to achieve similar ends.

Don't be put off by this list. *Perfect Filer* is still a powerful package. I have successfully kept membership records, registers, and collated questionnaires with it. My most recent venture was to collate the information on the *Perfect Writer* jump table - it took me a couple of hours to set up the database, extract the information (by far the longest part), set up reports and tip the final checked version into a *Perfect Writer* file.

After a rough start I am now converted; I have no experience with competitors like *Cardbox*, but I don't feel the need to go out and try them. I have used *WildBase III* but that is in a different league, in every sense.

### The Problems

There are two major hurdles which have been placed in your way: templates and reverse-video.

#### Templates

you will have discovered that the *Perfect Filer* manual has been anglicised, no doubt at great expense. In case you had any illusions the expense stopped with the manual; the software is pure, unadulterated American. The simple answer is to forget everything about templates - just don't use them. That's got rid of all the Americanisms at one fell swoop. (The exception is the date template which, despite the mm/dd/yy format, can be useful.)

#### Reverse Video



*Perfect Filer* uses reverse video to define the input fields on the data screens. On the BBC reverse video is set up by sending VDU control sequences to switch over the foreground and background colours. This works reasonably well provided that the sequences are sent in on-off pairs. However, *Perfect Filer* doesn't seem to be too good at its housekeeping and needs a little help to produce a presentable screen. Putting a character into the last but one column of the screen seems to do the trick. I use asterisks and make them into a border on all four sides.

### Starting Out

As usual a BEGIN.SUB file is useful:

```
*FX 3,6      ;turn the screen off
*FX 4,2      ;make the cursor keys programmable
*FX 5,1      ;select parallel printer
*FX 6,0      ;only if your printer needs it
;
*KEY 0 :D    ;other member / - / open line
*KEY 1 :E    ;enter record / - / -
*KEY 2 :I    ; - / - / insert field
*KEY 3 :T    ;insert date / time offset / insert template
*KEY 4 :R    ; - / relational operation / -
*KEY 5 :S    ;serial number / - / delete field
*KEY 6 :C    ;copy field / - / -
*KEY 7 :W    ;print record / - / -
*KEY 8 :D    ; - / - / delete line
*KEY 9 :L    ;refresh screen
;
*KEY 11 :H    ;previous menu selection
*KEY 12 :B    ;cursor keys
*KEY 13 :F    ;
*KEY 14 :N    ;
*KEY 15 :P    ;
;
MODE 3      ;Mode 0 works as well but not so neatly
F 0        ;black foreground
B 7        ;white background
;
*FX 3      ;turn screen on
VDU 12     ;clear screen
;
; Enter 'filer <drive>' for Perfect Filer
```

Note: This file sets up the function keys with all the control commands in *Perfect Filer*.

The notes refer to the uses of the keys when 'entering data / defining subsets / creating a database' respectively.

The colours I have used work well, but try others.

### Creating a Database

With your *Perfect Filer* disc in drive A put a clean formatted disc in drive B; run BEGIN.SUB and then enter ( create b ). A menu should appear - the first of many. The technique is to use <RETURN> to move down the list or <COPY> to move

up until the <X> is by the option you want - then key <X>. Take the 'Create New Database' option.

Note: some menus take you on to another menu but some have toggle options which <X> turns on or off. If you need to leave a menu then <ESCAPE> will always take you back up the chain.

Give your database a name and take the 'Define Data Display Screen' option from the next menu. You should get a blank screen; don't go dashing around inserting fields and templates for the moment.

Carefully put a column of asterisks down the left hand edge of the screen by entering ( \* <RETURN> ) until the cursor pops back to the top again. If you are in Mode 3 you should find that you have asterisks in all the rows except the last (that is because *Perfect Filer* is configured for a 24 row screen). You have also found that the screen wraps from bottom to top, and from top to bottom, but not from side to side.

Starting from the top left fill the first row with more asterisks stopping in the last column but one. If you don't stop then the line will extend onto the next row and one of the left hand asterisks will go missing. *Perfect Filer* can't cope with extended rows and the only thing to do is to delete the row using <+B> or <^D> and then insert a new one with <+O> or <^O>.

Fill in the right hand asterisks using ( <down><left>\* ) until you get to the bottom. Correct any mistakes by deleting and inserting rows.

Complete the border by filling in the missing asterisks on the left and the bottom. This may seem a fiddle but it is worthwhile. If you don't believe me come back and try without.

You can now lay out your data screen inside the border; there is nothing sacrosanct about the asterisks if you haven't enough room but try to keep a character in the right hand position and don't extend the rows.

Note: I find it simplest to rough out my fixed text and pencil in data fields using underline characters before I use the <inserting field> command. I can change my mind without having to delete and re-insert fields several times.

The first (top left) field on your screen will generate the index for your database so choose it carefully. It should not be the same for too many records; the system will cope with duplicate indices but it does slow things up.

Note: The name template uses a constructed field with the first initial plus the first three letters of the surname which stands a good chance of being unique; there is nothing to stop you constructing a similar hash field.

If you are experimenting then include 'serialno' as a four digit numeric field and 'dntenter' as a date template so that you can check out the facilities.

The only other advice I have on the data screen is that you should think carefully about the entry sequence. The cursor starts in the top left field, moves across that row, then down to the leftmost field on the next row (or conversely right and up). You should put any fields you will need to update frequently near the top left or the bottom right of the screen where you can

access them quickly. Otherwise keep related fields together sideways not downwards or you may find that when you come to enter data they are separated by unrelated fields.

When you have roughed out a screen layout to your satisfaction you can use the insert commands to put in the fields.

Note: Remember that an alphabetic field is exactly that, A-Z and a-z only with no punctuation.

When you have finished <ESCAPE> back to the menu and take the 'Display Screen Definition' option; print a copy - you will need it later to remind you of all the clever names you gave to the fields.

Take the 'Save Database' option and the system will take a couple of minutes to create your files. When it has finished <ESCAPE> back to the system prompt.

### Move

Inevitably you will want to change the layout of your screen or add a field or two after you have put in some data. The instructions in Chapter IX of the *Perfect Filer* manual work well. I have successfully modified databases containing quite large amounts of data. But it does take some time and it is a risky business; do check that you have back-up copies and don't try to do it in a rush.

### Using the Database

To access the database enter { filer b } at the system prompt - I assume that you keep your copy of *Perfect Filer* on a separate disc.

Note: There is a limit of one database per disc, but you can also store other files if there is room. If you are desperate you can store more than one database on a disk by using different user numbers, provided that the *Perfect Filer* files are in user[0] this works well but, on my system at least, I can't find a way of transferring files between user numbers.

I assume that you can find your own way through entering some data.

### Next time

Writing reports, extracting subsets, and, perhaps, generating form mail with *Perfect Writer* and *Perfect Filer*.

Bob Janes

## UNCONDITIONAL DELETE

If you find "Do you want to delete.....?" messages annoying, there is a solution. Simply type '[u]' after the file name and VOILA!

Derek Tripp

## SIDELIGHT LIBRARY

The Sidelight library disc is slowly growing and a directory listing is included with directory listings of the other discs which we have in stock. If you have something useful on disc for which there is no copyright or if you hold the copyright, why not send us a copy for inclusion on the Sidelight disc? We will of course return your original disc.

I must briefly mention two items on the Sidelight disc. Firstly, there is a copy of ADDTERM from Torch. It does have a documentation file but it is not a simple matter to install a termulator and there are several possible problem areas. Torch recommend that this should be performed by themselves or a dealer. If you require a termulator, by all means try installing ADDTERM. Even if you fail, let me have as much information as possible and we will eventually be able to put together an article to make this a much simpler task. If you install ADDTERM successfully, please make a special effort to keep me informed. Packages to emulate the ADM 3A and some other terminals are included. As they are popular terminals, this may solve your difficulties. The other item KEYBOARD from Bob Janes allows you to patch Perfect Writer for various function codes. More information on this will be included in the next issue of Sidelight but I understand from Bob that disc documentation is adequate. Once again, I have not been able to investigate either of these programmes so if you have any comments please send them in.

I must repeat my apology from the previous issue for not including the directory listings then but we simply ran out of space. I felt that the articles were more important to most members at that time.

Many thanks to Derek Tripp from Herald Computers of Cambridge. He is putting in a lot of effort to supply us with copies of the public domain discs that he has for inclusion in the software library.

Yet again, we are short of space - this time due to the directory listings, so there are no specific comments on the library volumes in this issue. If, however, you have any comments on any of the discs which we supply, please send them to us for inclusion in a future issue.

In addition to all the library discs, we can also supply a catalogue disc that covers all the public domain software which we can supply. Each disc costs £12.50 all inclusive. If you order more than one disc at the time, second and subsequent discs cost £12.00. Additional files may be included on a disc at a further cost of £2.00 for each volume we copy from. This additional charge covers a maximum of ten files. Full ordering details are on pages 28 to 31 of Volume 1 issue 1 of Sidelight.

Grahame Perchick

Library Volume listings start on the following page.

Sidelight Volume 01 Miscellaneous utilities

BEGIN.SUB See SIDELIGHT Issue 1 Pages 23-25

A.TMP /

TOP.SUB /

PW.HLP Rewritten Perfect Writer Help file

BEGIN.COM Faster version of BEGIN.SUB

DIARY.PC See Vernon Webb's article "Work Diary For Perfect Calc

EXAMPLE.PC / probably in SIDELIGHT Issue 2

PROGGEN.BAS Converts BBC BASIC files for use by BBC BASIC (Z80)

PROGGEN.DOC Documentation on PROGGEN.BAS

~~PERFECTWRITER.DOC Perfect Writer Help Notes (Torch Ltd)~~

~~PERFECTWRITER.DOC Perfect Writer Help Notes (Torch Ltd)~~

~~PERFECTWRITER.DOC Perfect Writer Help Notes (Torch Ltd)~~

LIST.COM Types a file stopping at the end of each screen

LISTIT.BBC BBC BASIC (Z80) programme with extended facilities to LIST.COM

PF/FX100.DAT PF Config file for Epson FX100 See file PF.DOC

PF/FX80.DAT PF Config file for Epson FX80 See file PF.DOC

PF.DOC Documentation file on PF/FX100.DAT and PF/FX80.DAT

ADDTERM.COM Termulator for Torch computers

ADDTERM.DOC Documentation for ADDTERM

OTHER.DOC Documentation for termulator patches

TERM.DOC /

2T04.TRM Termulator patches

CO3T.TRM /

CB80.TRM /

DS.TRM /

EXIT.TRM /

FXIN.TRM /

FXOUT.TRM /

H1500.TRM /

HKEY.TRM /

MC.TRM /

NULLTERM.TRM /

PAGEBIOS.TRM /

RDRPUN.TRM /

SUBMIT.TRM /

TERM.TRM /

IV1950.TRM /

KEYBOARD.BBC BBCBASICZ80 prog customise BBC+Torch keyboard for Perfect Writer

!HELP.HLP /To run load BBCBASICZ80 type "KEYBOARD" follow instructions

!HELP.COM /

KEYBOARD.HLP /

KEYBOARD.SUB /

KEYBOARD.TBL /

KEYBOARD.CPY /Disc in A: type "C KEYBOARD.CPY" to copy this prog suite to B:

UK User Group Volume 2.

ED111 Macro Text Editor by David Back.

US Group Catalog.

-CATALOG.02- CONTENTS OF CP/MUGUK VOL. 02-

2.1 13k CCP.ASM Source of the CCP of ICOS-80, a CP/M lookalike.  
2.2 80k CPMLIB.DOC US Library catalogue.



2.3	2k	CRCK.COM	CRC check program from US Vol.50.
2.4	1k	CRCKLIST.CRC	Checksums for files on this disk.
2.5	78k	ED111.ASM	Source of powerful macro text editor.
2.6	13k	ED111.COM	Command file of above.
2.7	4k	ED111.IMP	Implementation notes.
2.8	1k	EDIT.MAC	Macros for above.
2.9	3k	HELP.MAC	Macro information for above
2.9	3k	SIPAT.ASM	Patch for use with CP/M version 2.2
2.10	33k	TEXTED.DOC	Extensive documentation for above.
2.11	1k	UK2.DOC	Comments on programs.
2.12	2k	U-G-FORM.LIB	User Group submittal form.

#### UK Users Group Volume 5

DESCRIPTION: Intelligent Terminal routines.  
Improved Utilities.

NUMBER	SIZE	NAME	COMMENTS
		-CATALOG.05-	CONTENTS OF CP/M VOL. 05
05.1	11K	BASFK.ASM	Routine to load Cifer VDU function keys with BASIC statements.
05.2	1k	CAT.COM	Part of catalog system.
05.3	1k	CAT2.COM	Part of catalog system.
05.4	2k	CRCK.COM	Checksum program.
05.5	1K	CRCKLIST.CRC	Checksums of files on this disk
05.6	6k	DDISK.COM	Improved disk debug program
05.7	33K	DDISK.MAC	Source of above
05.8	1k	MAST.CAT	Sample catalog file.
05.9	30K	PRTH/21.ASM	Print listings with date and time
05.10	3K	PRTH/21.COM	.COM of above
05.11	1k	PRTH.DOC	Documentation for above.
05.12	3K	PWS.DOC	WordStar patcher for intelligent terminals/printers
05.13	29K	PWS/5.ASM	Source of 5.12
05.14	3K	TESTI80.ZSM	Test source file for I80 assembler
05.15	3K	UDCAT.COM	
05.16	11K	UDCAT.DOC	Doc of updated catalogue program
05.17	19K	UDCAT.MAC	Improved disk catalogue program
05.18	57K	Z80ASMUK.ASM	Improved Z80 Assembler
05.19	9K	Z80ASMUK.COM	.COM of above
05.20	5K	Z80DOCUK.DOC	Documentation for assembler

#### UK Users Group Volume 8.

DESCRIPTION: Miscellaneous Utilities.

NUMBER	SIZE	NAME	COMMENTS
		-CATALOG.08-	CONTENTS OF UK VOL. 08
08.1	9K	ASMSYMBL.ASM	Add sorted symbol table to ASM.COM
08.2	1K	BCOM.COM	Binary file compare utility.
08.3	15K	BLOCK.ASM	Block Letter display routine.
08.4	1K	DISK.COM	Directory list program
08.5	2K	DSKED.COM	Disk sector editor.

08.6	1K	DUMP.COM	Dump file in Hex and ASCII.
08.7	4K	EDIT.COM	Text editor.
08.8	16K	EDIT.DOC	Documentation for editor.
08.9	2K	EPRINT.COM	Multiple file print for MX80.
08.10	1K	ERASE.COM	Selective file erase.
08.11	1K	FCOM.COM	File compare program.
08.12	2K	IMAGE.COM	Track copier program.
08.13	2K	MFT.COM	Two drive copy program.
08.14	2K	MFT1.COM	Single drive copy program.
08.15	1K	UNERASE.COM	Recover erased files.
08.16	10K	UTILITY.DOC	Doc. for files on this disk.
08.17	1K	VERIFY.COM	Verify disk or selected files.
08.18	1K	WORDS.COM	File word/character count.
08.19	29K	XREFASM.ASM	Cross-reference listing from
08.20	4K	XREFASM.COM	.PRN file produced by
08.21	3K	XREFASM.DOC	ASM.COM, Z80ASM.COM or
08.22	6K	XREFASM.REF	MAC.COM assemblers.
08.23	20K	ZDIS.DOC	Doc. of disassembler.
08.24	9K	ZDIS24K.COM	Z80 disassembler to
08.25	9K	ZDIS32K.COM	Zilog/Mostek or TDL
08.26	58K	ZDIS32K.ZSM	mneumonics.

UK Volume 09

DESCRIPTION: Miscellaneous.

NUMBER	SIZE	NAME	COMMENTS
		-CATALOG.09-	CONTENTS OF UK VOL. 09
09.1	1K	COMP.COM	See LROM.DOC.
09.2	5K	COMP.MAC	/
09.3	1K	CRLF.MAC	/
09.4	1K	CSUM.COM	File checksum program.
09.5	2K	CSUM.MAC	/
09.6	3K	EASTER.PAS	Pro-Pascal program
09.7	1K	ERQ.COM	Interactive file erase.
09.8	5K	ERQ.MAC	/
09.9	1K	FRMEM.MAC	See LROM.DOC.
09.10	1K	INLIN.MAC	/
09.11	2K	LABEL.BAS	Library disk label print.
09.12	8K	LIFE.PAS	Life for Pro-Pascal.
09.13	2K	LROM.DOC	Extract group of records from .COM file.
09.14	6K	LROM.MAC	/
09.15	2K	MPRINT.COM	Updated multiple file print.
09.16	12K	MPRINT.Z80	/
09.17	1K	PINIT.COM	Printer set-up program.
09.18	2K	PINIT.DOC	/
09.19	8K	PINIT.MAC	/
09.20	2K	PRIMES.PAS	Pro-Pascal program
09.21	2K	REGHEX.MAC	See LROM.DOC
09.22	3K	RESULTS.PAS	Pro-Pascal program.
09.23	8K	REZ80.COM	RESOURCE modified to
09.24	26K	REZ80.DOC	produce Zilog mnemonics.
09.25	38K	REZ80.MAC	/
09.26	38K	REZ80.ZSM	/
09.27	3K	RLIN.MAC	See LROM.DOC.

09.28	6K	SIG.FMT	Data file for LABEL
09.29	3K	SYSLIB.REL	See LROM.DOC
09.30	1K	UK.FMT	Data file for LABEL.
09.31	6K	US.FMT	Data file for LABEL.

#### UK Volume 11

DESCRIPTION: STOIC Volume 1.

NUMBER	SIZE	NAME	COMMENTS
		-CATALOG.11-	CONTENTS OF UK VOL. 11
11.1	13K	ASSEMBL.DOC	Stoic 8080 assembler
11.2	3K	BM.STC	Stoic Benchmark program
11.3	3K	CALENDAR.BAS	BASIC Calendar program
11.4	7K	CALENDAR.STC	Stoic Calendar program
11.5	8K	DICT.DOC	Stoic dictionary definitions
11.6	5K	FLOATPNT.DOC	Floating point documentation
11.7	2K	READ.ME	Doc for UK Volumes 11,12
11.8	2K	README.DOC	Doc for Calendar programs
11.9	11K	STOICFLT.STC	Floating point package
11.10	5K	STOICINT.STC	4 byte integer addition
11.11	2K	STOICSR.TC	Stoic sort routine
11.12	8K	UK-INTRO.TXT	Introduction to Stoic
11.13	13K	UK-PRACT.TXT	'Get-you-started' file
11.14	4K	UKMISC.STC	Misc Stoic Words
11.15	28K	UKSTOIC1.DOC	Stoic Documentation
11.16	27K	UKSTOIC2.DOC	/
11.17	13K	UKSTOIC3.DOC	/
11.18	14K	UKSTOICB.COM	Simple Stoic compilation

#### UK Volume 12.

DESCRIPTION: STOIC Volume 2 by Keith Goldie-Morrison.  
FORTH-79 by Denis Larder.

NUMBER	SIZE	NAME	COMMENTS
		-CATALOG.12-	CONTENTS OF UK VOL. 12
12.1	3K	FORTH.DOC	Documentation for FORTH files.
12.2	14K	FORTH++.COM	Extended FORTH (See FORTH.DOC)
12.3	8K	FORTH-79.COM	FORTH 79
12.4	38K	KERNEL.ASM	Stoic Kernel.
12.5	1K	READ.ME	Stoic Note.
12.6	23K	STOICBAS.STC	Stoic basic definitions
12.7	3K	STOICFFT.STC	Stoic floating point FFT
12.8	3K	STOICSAL.DOC	Stoic string handling (from UK Vol.4)
12.9	4K	STOICSAL.STC	/
12.10	2K	STOICSIN.STC	Stoic sine/cosine words
12.11	22K	UKCP/M.STC	Stoic - CP/M file handling
12.12	13K	UKEDIT.DOC	Stoic Editor documentation
12.13	12K	UKEDITOR.STC	Updated Stoic Editor
12.14	4K	FILE.DOC	Doc. of Stoic file handling
12.15	22K	UKSTOICE.COM	Compiled Stoic Editor
12.16	18K	UKSTOICF.COM	Compiled Stoic file system

# UK Users Group Volume 14

DESCRIPTION: (1) C Programs  
(2) Utilities.

NUMBER	SIZE	NAME	COMMENTS
		-CATALOG.14-	CONTENTS OF UK VOL. 14
14.1	24K	BBCBASIC.HLP	Help file for BBCBASIC(Z80)
14.2	2K	CPROBS.DOC	Documentation for C programs on this disc
14.3	4K	EXAMPLE.MAC	Sample program using TI9995 macro library
14.4	1K	EXAMPLE.REL	/
14.5	10K	FCAT.COM	Improved catalog program
14.6	2K	FCAT.DOC	/
14.7	5K	FCAT.PAS	/
14.8	1K	FILTER.C	Remove CR from text file
14.9	2K	FILTER.COM	/
14.10	13K	HELP.ASM	Improved help program
14.11	2K	HELP.COM	/
14.12	1K	LIST.C	File display program
14.13	4K	LIST.COM	/
14.14	3K	MYLIB.C	C/80 library
14.15	28K	SWEEP.COM	Super directory maintenance and file transfer
14.16	13K	SWEEP35.DOC	utility
14.17	1K	SYM.COM	Convert M80 symbol table for Z8ID
14.18	3K	SYM.DOC	/
14.19	7K	SYM.MAC	/
14.20	5K	TERM.C	Terminal program for TRS80 model II
14.21	38K	TERM.COM	/
14.22	1K	WORDCNT.C	Count words in text file
14.23	4K	WORDCNT.COM	/
14.24	7K	X9995.LIB	M80 macros for TI 9995 cross-assembler
14.25	2K	XLATE.COM	Translate 8080 to Z80 source
14.26	12K	XLATE.MAC	/
14.27	3K	ZXREF.COM	Cross-ref program for Z80 source
14.28	21K	ZXREF.ZSM	/

# UK Users Group Volume 15

DESCRIPTION: (1) Small-C Compiler  
(2) Telex Communication Program

NUMBER	SIZE	NAME	COMMENTS
		-CATALOG.15-	CONTENTS OF UK VOL. 15
15.1	3K	C-UTIL.DOC	Doc on TAB,LIST,FILECHOP,UNLOAD
15.2	5K	CONIO.LIB	Small C libraries
15.3	5K	CRUN.LIB	/
15.4	12K	CZMON.C	Sample Small-C program
15.5	6K	CZMON.COM	/
15.6	8K	CZMON.DOC	/
15.7	11K	FILE.LIB	Small-C library
15.8	4K	FILECHOP.C	Chop large files into sections
15.9	4K	FILECHOP.COM	/
15.10	2K	LIST.C	Sample Small-C program
15.11	2K	LIST.COM	/
15.12	2K	NUMIO.LIB	Small-C library

15.13	3K	TAB.C	Sample Small-C program
15.14	3K	TAB.COM	/
15.15	4K	TELEX.DOC	Notes on UK Telex system
15.16	4K	U-G-FORM.LIB	Small-C submission form
15.17	3K	UKINSTL.COM	Telex communication program
15.18	20K	UKTLX.ASM	/
15.19	3K	UKTLX.COM	/
15.20	4K	UKTLX.DOC	/
15.21	9K	Z80ASMUK.COM	Z80 Assembler for use with Small-C
15.22	6K	Z80DOCUK.DOC	/
15.23	19K	ZSC-1.C	Small-C compiler
15.24	18K	ZSC-2.C	/
15.25	11K	ZSC-COMP.LIB	/
15.26	23K	ZSMALL.COM	/
15.27	16K	ZSMALL.DOC	/

Sig/M volume 43      8080 TINCMP Compiler and  
Pidgin Programming System  
CP/M-86 Bios Support

-CATALOG.043      contents of Sig/M volume 43  
released November 25, 1981  
ABSTRACT.043      abstract of Sig/M volume 43  
ACKLIST.043      acknowledgement file  
CRCKLIST.043      checksum of Sig/M volume 43

index	name	size	description
43.01	DESCRIP .DOC	16K	details of TINCMP and PIDGIN
43.02	IOCMPLX .ASM	19K	PIDGIN programming system
43.03	IOCMPLX .REL	2K	/
43.04	MACROS .PGN	8K	/
43.05	PIDGIN .S2M	10K	/
43.06	PIDGINLB.REL	1K	/
43.07	PIDMATH .ASM	5K	/
43.08	PIDMATH .REL	1K	/
43.09	STAGE2 .COM	12K	STAGE2 support system
43.10	SYSTEM .ASM	1K	PIDGIN programming
43.11	SYSTEM .REL	1K	/
43.12	TINCMP .COM	17K	TINCMP compiler
43.13	TINCMP .MAC	20K	/
43.14	TINCMP .PGN	12K	/
43.15	TINCMP .REL	5K	/
43.16	TINTEST1.PGN	3K	/
43.17	TINTEST2.PGN	3K	/
43.18	TINTEST3.PGN	1K	/
43.19	TINTEST4.PGN	3K	/
43.20	TINTEST5.PGN	2K	/
43.21	TINTEST6.PGN	2K	/
43.22	WC .PGN	2K	TINCMP test program
43.23	WRNXT .ASM	1K	PIDGIN console I/O
43.24	WRNXT .REL	1K	/
43.25	CBIOS .A86	17K	CP/M-86 Bios
43.26	GDCPM86 .ASM	1K	/
43.27	ERQ .A86	3K	/
43.28	SD .A86	15K	CP/M-86 directory sort

135.32	UNLOCK	.OBJ	11K	41 C1	/
135.33	UNLOCK	.WPF	12K	88 34	/
135.12	LPR	.CQ	6K	2F 6F	Printer program - currently set for Epson
135.13	LPR	.OBJ	14K	B6 16	/
135.14	MFT50	.ASM	27K	B9 CE	Multiple file transfer program
135.15	MFT50	.OBJ	3K	97 B2	/
135.18	PCAT	.BAS	6K	1C 42	Hardcopy catalog in master catalog system
135.19	POKER	.BAS	12K	96 C6	Beats you every time
135.20	RELOC	.CQ	6K	E2 59	Move a program to top of TPA and run it
135.21	RELOC	.DQC	19K	12 6F	/
135.22	RELOC	.MQC	7K	05 E9	/
135.23	RELOC	.OBJ	10K	CF EC	/
135.24	RELOC	.REL	1K	38 3D	/
135.25	RELOC	.SUB	1K	BF 72	/
135.26	RELOC	.TXT	2K	6A 14	/
135.27	SPR2	.OBJ	1K	07 EA	/
135.28	SRP1	.OBJ	1K	2E 47	/
135.29	TEST	.SUB	1K	B1 DC	/
135.30	TEST1	.MQC	4K	C3 D9	/
135.31	TEST2	.MQC	2K	8C CF	/
135.34	WPF	.C	2K	09 34	Translate .WPF files to conventional
135.35	WPF	.OBJ	6K	9D AD	format

SIG-M Library -CATALOG Volume Number-135, 35 Files cataloged.

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SIG/M Volume 144 Miscellaneous Programs  
Software Tools of Australia and others

-CATALOG.144 contents of SIG/M Volume 144  
released October 7, 1983

CRC	.COM	checksum program
SIG/M	.LIB	disk donation form
USQ	.COM	unsqueeze program

index	name	size	crc	description
144.01	GRAPH .REL	1K	49 C2	Graph subroutines for Epson MX80
144.02	GRAPH .ZQO	11K	12 04	/
144.03	I2 .CQM	22K	4D A4	Intel to Zilog mnemonic source
144.04	I2 .DQC	11K	92 EA	code translator
144.05	I2 .DQT	7K	C1 83	/
144.07	I2 .PQS	14K	2A 9C	/
144.07	MAKEFILE.ASM	6K	B6 39	Builds a dummy file with marked blocks
144.08	MAKEFILE.COM	2K	FD 0E	/
144.09	NESTING .C	1K	10 C6	Notes on nesting in BDS C from version
144.10	NESTING .NOT	3K	AD F7	1.45a
144.11	PMDLALDS.FRQ	13K	89 52	Autodialing with PMMI
144.12	RENAME .C	8K	A2 FF	Wildcard rename utility
144.13	RENAME .DDC	4K	0F 96	/
144.14	RENAME .OBJ	10K	A0 8B	/
144.15	BDS .H	1K	B1 07	/
144.16	SETBOOT .MAC	19K	6B B7	Osborne 1 boot
144.17	SQ .CQ	8K	AC 51	Update to squeeze, wildcards and other
144.18	SQ .H	2K	10 97	features
144.19	SQ .OBJ	17K	66 FE	/

144.20	SQ15A	.DOC	2K	29 77	/
144.21	SQ15A	.SUB	1K	37 E4	/
144.22	SQCOM	.H	1K	3E 8E	/
144.23	IO	.C	1K	75 6A	/
144.24	LONG	.CQ	2K	66 0B	/
144.25	TR1	.CQ	2K	10 74	/
144.26	TR2	.CQ	9K	BF 25	/
144.27	UCSD2CPM.C		16K	B4 5A	Text transfer UCSD formatted disk to CP/M
144.28	UCSDIR	.C	10K	EF E4	List directory of UCSD Pascal disk
144.29	UCSDTYPE.C		15K	A0 5C	Text transfer UCSD dir to CP/M console

SIG-M Library -CATALOG Volume Number-144, 29 Files cataloged.

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SIG/M Volume 148 Pascal Z Users Group Volume 027

-CATALOG.148 contents of SIG/M Volume 148  
released November 4, 1983

ABSIRACT.148 information regarding volume  
SIG/M .LIB Donation form  
CRC .COM checksum program

index	name	size	crc	description
148.01	BIOSIN .PAS	9K	45 29	Calendar program
148.02	ERASE .COM	8K	8B 97	'User friendly' erase
148.03	ERASE .PAS	6K	D3 A2	/
148.04	INITLISP.	1K	62 14	Updated Lisp in Pascal
148.05	INITLISP.STB	1K	F9 1E	/
148.06	LISP .COM	27K	C6 3B	/
148.07	LISP .DOC	14K	65 23	/
148.08	LISP .PAS	38K	32 A1	/
148.09	PRIME .COM	20K	F3 46	Illustration of public-key
148.10	PRIME .DOC	4K	02 6B	cryptography
148.11	PRIME .PAS	3K	1C 3D	/
148.12	PRIME .TXT	3K	0B 7A	/
148.13	PRIME1 .PAS	3K	55 CE	/
148.14	RNDKNUTH.LIB	7K	AD 1E	Random numbers library file
148.15	SIGNS .DOC	4K	E5 63	Formatting program for both
148.16	SIGNS .PAS	6K	7F 7F	80 and 132 col printers
148.17	SIGNS .TXT	4K	55 13	/
148.18	SIGNS11 .COM	10K	50 6C	/
148.19	SIGNS6 .COM	10K	59 CA	/
148.20	FONT .DAT	1K	45 1C	/
148.21	STUDENT2.COM	19K	01 80	Updated Student program
148.22	STUDENT2.PAS	23K	1C 37	/
148.23	TUTOR .PRN	9K	DF 95	/

SIG-M Library -CATALOG Volume Number-148, 23 Files cataloged.

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SIG/M Volume 154 Forth-83

SIG/M Volume 119 Library Filing and Utility System,  
BYEII Library File

-CATALOG.119 contents of SIG/M Volume 119  
released June 19, 1983

ABSTRACT.119 info re this volume  
CRC .COM checksum program

index	name	size	crc	description
119.01	BYEII .LBR	72K	C1 B3	Second generation BYE in LBR format.
119.02	CHGLIB14.LBR	18K	B1 7F	Library file and utility system.
119.03	LBR .DOC	3K	25 26	One file contains all of the
119.04	LCRCKNEW.LBR	10K	9C CF	files and information necessary
119.05	LDIR .COM	6K	0D 0B	to get a program online. All program
119.06	LDIR .LBR	13K	B0 39	modules are compacted into a single
119.07	LM16 .ASM	33K	51 AB	library (.LBR) file. Using these
119.08	LMODEMXX.MSG	2K	D2 10	programs you can extract from the
119.09	LRUN20 .ASM	21K	F9 F9	LBR file those portions of the total
119.10	LRUN20 .COM	2K	19 1B	files you may need. In this way when
119.11	LU210 .DOC	29K	CA C6	you receive a library file you are
119.12	LU211 .COM	18K	3D 98	assured that you have all the info
119.13	LUDEF1 .DOC	7K	F2 A0	you need.

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SIG/M Volume 135 SOFTWARE TOOLS OF AUSTRALIA - VOL 17  
CP/M utilities and misc. programs

-CATALOG.135 contents of SIG/M Volume 135  
released September 1, 1983

CRC .COM checksum program  
SIG/M .LIB disk donation form

index	name	size	crc	description
135.01	DIR-DUMP.ASM	8K	42 F2	Displays disk directory formatted
135.02	DIR-DUMP.DOC	2K	C9 83	for 64 col. screen
135.03	DIR-DUMP.OBJ	1K	E6 7A	/
135.04	EXTCOM1 .ASM	5K	D8 24	Exit from CP/M to comms program (8251 UART)
135.05	INF .MAC	14K	AD 16	Comprehensive disk format display
135.06	INF .OBJ	2K	7E A3	/
135.07	ITOH5000.ASM	8K	AC E8	Graphics driver for C.Itoh 8010
135.08	LD1 .C	8K	1F 9C	Loader for machine language programs
135.09	LOCK .DOC	2K	71 59	'Locks' program for security
135.10	LOCK .OBJ	11K	6B 39	/
135.11	LOCK .WPF	11K	2F FB	/
135.16	MKEY .OBJ	1K	BB 59	/
135.17	MKEY .WPF	5K	EB 67	/



-CATALOG.154 contents of SIG/M Volume 154  
released January 6, 1983

ABSTRACT.154 explains how to use this disk  
JOIN .ACG ACGNJ membership application  
SIG/M .LIB software donation form  
CRC .COM checksum program - type 'CRC' to validate disk  
USQ .COM program to unsqueeze squeezed files - wildcard version

index	name	size	crc	description
154.01	F83 .COM	24K	A1 A8	Compiled Forth with editor, assembler, etc
154.02	F83 .DOC	9K	80 88	Documentation file
154.03	CPUS080 .BQK	9K	03 D2	Assembler, debugging & multitasking source
154.04	DIRECT .BQK	4K	D1 D7	Support screens for direct BIOS I/O
154.05	EXTEND80.BQK	9K	66 C2	Extension screens
154.06	KERNEL .HEX	33K	47 82	Hex file for F83
154.07	META80 .BQK	73K	CF A9	Meta source & F83 screens
154.08	UTILITY .BQK	36K	FF 46	CP/M interface, editor & multitasking
SIG-M Library -CATALOG Volume Number-154, 08 Files cataloged.				

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SIG/M Volume 156 Miscellaneous Z80 and 8080 Programs

-CATALOG.156 contents of SIG/M Volume 156  
released January 6, 1983

JOIN .ACG ACGNJ membership application  
SIG/M .LIB software donation form  
CRC .COM checksum program - type 'CRC' to validate disk  
USQ .COM program to unsqueeze squeezed files

index	name	size	crc	description
156.01	1771 .LBR	62K	EE 54	Extended SD storage for 1771 systems
156.02	FIND40 .LBR	14K	2B 66	Updated FIND
156.03	LU301 .COM	19K	8A 32	Updated library utility
156.04	LU301 .TXT	2K	AA B4	/
156.05	LUX12B .LBR	87K	45 64	Z80 utility for library files
156.06	M712TRS .AQM	8K	91 C0	Modem for TRS-80 Models 2, 12 & 16
156.07	SQ-17 .LBR	24K	4A 5A	Updated squeeze program
156.08	XM77TRS .AQM	6K	AE 82	Xmodem for TRS-80 Models 2, 12 & 16
SIG-M Library -CATALOG Volume Number-156, 08 Files cataloged.				

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VOLUME 504 CPMNL-4

DESCRIPTION: Basicode II on Forth

NUMBER	SIZE	NAME	COMMENTS
		CATALOG.504	CONTENTS OF CP/MNL VOL. 504

04.1	0K	-CPMNL.504	id for catalog program
04.2	2K	ABSTRACT.504	Abstract of this disk
04.3	16K	BASICODE.DOC	BASICODE doc voor lezen basicode
04.4	2K	BC2.BAS	Standaard basicode aanpassing
04.5	2K	BC2.OSB	Osborne " "
04.6	2K	BC2.OSI	OSI CSI " "
04.7	12K	BCREAD.ASM	Lees prog via parrallel poort
04.8	6K	BCTEST.ASM	Prog testen hardware op poort
04.9	12K	BCWRIT.ASM	Schrijf prog Standaard basicode
04.10	12K	BCWRITE.ASM	Schrijf Prog Forth versie
04.11	13K	CONVERT.COM	Convert van BASICODE > MBASIC
04.12	5K	CONVERT.BAS	Source in CB80
04.13	1K	FUNCTION.DAT	file van 4.11
04.14	1K	KEYWORDS.DAT	" " "
04.15	5K	UITLEG1.BAS	uitleg van BC Standaard
04.16	10K	UITLEG2.BAS	vervolg Basicode standaard
04.17	5K	BOKA&EI.BAS	Voorbeeld prog in BASICODE
04.18	9K	DELEERS.BAS	/
04.19	3K	DIGIKLOK.BAS	/
04.20	3K	FEESTEN.BAS	/
04.21	7K	KALFEEST.BAS	/
04.22	4K	MASSA.BAS	/
04.23	7K	SORT.BAS	/
04.24	4K	STELSELS.BAS	/
04.25	5K	TANKIE.BAS	/
04.26	4K	TESTBC2.BAS	/
04.27	5K	TIMER555.BAS	/
04.28	7K	FORTH.COM	Figforth 1.1 for Cp/m 2.x.
04.29	6K	FORTH.DOC	In het engels
04.30	1K	FORTH.SUB	/
04.31	26K	FORTH1.ASM	/
04.32	17K	FORTH2.ASM	/
04.33	15K	FORTH3.ASM	/
04.34	8K	STARTUP.FRT	/

The following volumes are in stock and will be fully listed in future issues.

CP/MUKUG	Volume 16	Miscellaneous utilities
Sig/M	Volume 53	Updated SAM76
Sig/M	Volume 112	SIGNON/RBBS programs
Sig/M	Volume 114	PISTOL v2.0 Portably Implemented Stack Oriented Language
Sig/M	Volume 115	Miscellaneous programs
Sig/M	Volume 116	Including Forth and ZCPR2 upgrades
Sig/M	Volume 123	Miscellaneous LBR and other files
Sig/M	Volume 127	Communication and Disk File Program, SAP Update
Sig/M	Volume 128	Bulletin Board Software Upgrades
Sig/M	Volume 129	dBASEII ORDER AND INVENTORY PROGRAM
Sig/M	Volume 130	"SIGNON" System of programs for RCP/M Usage
Sig/M	Volume 140	Cross Assemblers and Misc. Utilities
Sig/M	Volume 142	Games from Software Tools of Australia
Sig/M	Volume 143	Packet Radio, Printer Utilities, etc
Sig/M	Volume 152	Disk Drive Tester, Miscellaneous Updates
Sig/M	Volume 155	dBASEII (TM) Programs and Information
Sig/M	Volume 160	CROSS REFERENCE, ERASE, APPLE II, TIME STAMP PROGRAM
Sig/M	Volume 162	Concurrent Pascal-S Compiler PL/O Compiler

## FIGURING OUT ASCII AN INTRODUCTION FOR PFCONFIG

From the many letters I have received, it is obvious that printer configuration is the most common problem with Perfect Writer. In the previous issue, we published details of configuring for an Epson FX80 and on the Sidelight library disc there are some alternative configurations for the FX 80 and FX100. This article is more general and should allow you to configure for any printer. It also gives one or two tips and wrinkles which might help you to get a little extra from more intelligent printers such as the FX 80.

My original plan was to publish a single article covering the whole subject but this would have to assume a great deal of foreknowledge. I have, therefore, split the article in two. This first part covers the background knowledge which you may well find useful at other times. The second part which will be published in the next issue of Sidelight will contain the details of using PFCONFIG. These articles only cover printer configuration so far but PFCONFIG contains more than just that and a third part covering the remainder of PFCONFIG will be written if there is sufficient demand. Although many printers may operate satisfactorily using one of the supplied formats, you will be unable to utilise fully any but the simplest of printers without using PFCONFIG. It is, therefore, well worth while for most people to "have a go".

Let us first examine the need for a printer configuration programme. The first point to note is that it is not the printer which is configured but Perfect Writer. The second point worthy of mention is that PFCONFIG is used for Perfect Writer - it is not used for Perfect Filer so why it is called PFCONFIG mystifies me. From looking at printers in computer shops, it will become apparent that there are several differences which affect their usage. The most obvious difference is probably paper size. This varies in width from four inches to fifteen inches and in length from eleven inches to a potential four hundred foot! The number of characters per line varies from forty or less to two hundred and forty six or more.

Obviously, Perfect Writer must be aware of these differences in order to perform justification and get page breaks in the correct place. In addition to the obvious differences mentioned above, there are a host of other possibilities - for example, the ability to provide a new line from a single code; backspace a single character; underline; italics; form feed and bold printing. Additionally, many printers can operate in different modes such as character size changes, proportional spacing or fixed spacing and different paper widths within a single printer - not to mention single sheets or continuous forms.

Just to add to the confusion, although most printers use the same codes for printed characters, the codes used to control such characteristics as the number of characters per inch are not standardised.

The purpose of the configuration programme then is to ensure that Perfect Writer has all the pertinent information about the printer in use. In fact, a single printer can have more than one configuration. For example, perfect Writer can only cope with printers which have a fixed number of characters per inch - this is sometimes termed the character pitch, in which case, it is referred to as eg 10 pitch ie. 10 characters per inch. If, therefore, your printer can print at more than one pitch, it will be necessary to have one configuration for each pitch. The snag is that you will not then be able to mix character sizes within a single document. This can, however, be fiddled - the way in which it can be done will be explained later.

The prospect of dealing with two unknowns - the printer manual and PFCONFIG may be somewhat daunting but it is well worth the effort especially as PFCONFIG is the most friendly of the Perfect programmes.

The description which follows does get rather convoluted in places but by concentrating on the parts relevant to your printer, all should be clear. I would suggest that the best approach would be to read right through this article and the next in the following issue in one go, trying to pick up the principles but not worrying too much about the details. For your second reading, arm yourself with pencil, rubber, paper, calculator and your printer manual. As you read about each question in the next article, make a note of what you believe the answer is for your printer. Finally, sit down at your computer and go through the printer definition filling in your answers.

A word of caution is called for here. If you are able to get some sense from your printer using the Vanilla definition, the safest, and in the long run, probably the fastest approach would be to use Vanilla changing just one or two parameters at the time. In this way, it is much simpler to see the results of your changes. Finally, DO NOT modify the original disc. Make yourself a work system disc by placing the original disc in drive A, a blank but formatted disc in drive B and type MAKEWRIT <return>. Put away the original disc - from drive A and label the disc from drive B as your work system disc. If you have version two of the Perfect software, PWCUSTOM will be found on the Perfect Filer disc and must be copied across to your Perfect Writer work disc if required.

Before delving into PFCONFIG, the fundamentals of numbering systems and how computers handle characters must be appreciated. The numbering system we normally use is the decimal system. This is to a base of ten ie. it uses ten numerals - 0 to 9, allegedly because we have ten fingers. I don't believe the fingers bit, but that's another story.

Computers operate purely on numbers. Thus, when manipulating alphabetic characters, such as during word processing, the characters are represented in the computer by numbers. The numbering system used by computers is the binary system. This system is to a base of two and hence uses two numerals 0 and 1. Each digit in a binary number is referred to as a "bit".

The major disadvantage of the binary numbering system to humans is the number of digits used in large numbers. As an example, my phone number is 904 9323. This is not too much of a mouthful, doesn't take very long to dial and can be remembered relatively easily by most people. Represented in binary notation, it would be something like: 10001010000101001110111 - I'm sure you can see the problems this would cause. A difficulty is the conversion between decimal and binary. This is fine when the computer does it for you but this isn't always the case. A good compromise is Hexadecimal. This numbering system is to a base of sixteen. As there are only ten digits available, we make up the shortfall with the first six letters of the alphabet, A to F.

The reason that hexadecimal (hex) is popular is twofold. Firstly, it is fairly easy to convert to and from binary because there is a direct mapping ie. four binary bits correspond to one hex digit. Converting between binary and decimal is far more tortuous because this direct mapping does not exist. The second reason is that because most computers and micros operate on a multiple of four binary bits ie. 8,12,16 or 32, there is an exact number of hex digits in a computer word.

The final numbering system we shall consider is Octal which, as its name suggests, uses eight numerals - zero to seven. One octal digit directly maps on to three binary digits. It is slightly simpler to convert to and from binary and octal than binary and hex because only three bits are involved at the time but the penalty is that there are more digits in an octal number. As an example, my phone number quoted earlier: 904 9323 converted to various bases is as follows:

10001010000101001110111	Binary
21205167	Octal
450A77	Hexadecimal

The actual numeric value assigned to each character is normally as defined by the seven bit American Standard Code for Information Interchange. This is normally abbreviated to ASCII (pronounced askey). There are several standards based on ASCII. Two common European standards are from ISO and CCITT.

So much for the theory. In practice, this means that printer manufacturers may quote the codes they need to print a particular character or set a mode as an ASCII character, a decimal number, a hexadecimal number or, less likely, octal or binary. PFCONFIG expects its codes to be in ASCII. In order to simplify matters, Table 1 allows you to convert from or to any of ASCII, decimal, hex or binary and with a little extra effort, Octal. The binary value is included because this is how the computer views the code and to allow conversion to Octal.

The ASCII characters are laid out in the grid of Table 1. The decimal value for a character is shown in the small box with each ASCII character. To convert from ASCII to hex, follow up the column in which the ASCII character appears to obtain the most significant part of the hex number. The least significant part of the hex value is obtained by following across to the left on the same line as the ASCII character. Note that the hex values are in the column and row closest to the ASCII characters. To obtain the binary value, proceed as for the hex value but use the values on the outside of the table.

A couple of examples should make the procedure clear.

To convert "R" to its hex value: follow up the column to obtain "5" as the most significant digit and across to "2" as the least significant part. The value is thus 52 hex. The decimal value is of course 82. If we convert "M" it is 4D hex and 77 decimal. Binary values are read off in a similar way to the hex values. To return to "R", following the columns up we obtain 0101 and going across, we obtain 0010. Placing these two together gives 0101 0010. By the same process, "M" is 0100 and 1101 which gives 0100 1101.

This process may be reversed to obtain the ASCII code for a hex value as follows: the first digit is found in the top row, the second digit is found at the side. Following down from the top and across from the side will give us the character where the row and columns meet. For example "4C": look across the top row for the 4, this is immediately above the "C", following down until we come to the row with the C at the side, we find "L". Similarly "65" is "e".

If you are unfortunate enough to have to convert to or from Octal, life is a little more complex. To convert from ASCII to Octal, first obtain the binary value. From the examples above, we obtained 0101 0010 for "R". Now add a zero at the front to obtain 0 0101 0010. The bits are now regrouped into threes ie. 001 010 010. Now use the binary <-> Octal conversion table in Fig 1 to obtain the Octal value for each group of three binary digits thus: 001 = 1, 010 = 2, 010 = 2. The Octal value is therefore 122. Now try "M". We get a binary value of 0100 1101, adding a leading zero gives 0 0100 1101 then regroup 001

001 101 and the answer is 115 Octal.

Converting from octal to ASCII is the same in reverse. To convert 145 Octal referring to the Binary-> Octal conversion table gives 001 100 101. Drop the leading zero to give 01 100 101 and regroup into two groups of four to give 0110 0101. Looking across the table for 0110 is the same column as hex 6 and looking down the table 0101 is the same row as hex 5, the row and column intersect at "e".

If you want to build up your confidence, try the following examples. For the answers, see the end of this article.

CONVERT FROM	CONVERT TO
1 ASCII "H"	decimal, hex and octal
2 ASCII "="	decimal, hex and octal
3 ASCII "t"	decimal, hex and octal
4 hex 26	ASCII and decimal
5 hex 57	ASCII and decimal
6 hex 7C	ASCII and decimal
7 decimal 90	ASCII
8 decimal 104	ASCII
9 binary 0110 0010	ASCII
10 binary 0010 0101	ASCII
11 Octal 107	ASCII
12 Octal 152	ASCII

Up to now, I have ignored the two left hand ASCII columns labeled "Control Codes" - these are sometimes referred to as "Non Printing Codes". To convert to and from these is the same as for the "Printing Codes". For example, "CR" is hex 0D. Table 3 shows the meaning of the abbreviations used for the non printing codes in Table 1. This Table is included in the interests of completeness but most of the non printing codes will perform different functions in your printer.

There is one point worthy of mention and that is how to access the non printing codes. Most readers will be familiar with ^A and Control-A - both of which mean type a control character. The effect of typing a control character is, of course, to produce a Control Code. Printer manuals, however, tend to use the ASCII names for control codes. The difficulty is to know which key to press. Once again, Table 1 comes to the rescue. Each of the two columns which contain control codes are connected with a column which contains printing codes. This connection is shown by the arrowed lines at the foot of Table 1. Thus to generate "BEL" you must press control-G. Similarly, we can see that control-H will result in "BS".

There are, of course, exceptions to this rule: DEL was selected as 7F hex for historical purposes. It was originally used to correct mistakes in punched paper tape or cards. Thus, it was simplest to punch all the holes rather than trying to fill some up! It should be obvious from many non-printing codes that they have similar histories having originated from paper tape teleprinters and were used as a fairly simple sort of communications protocol. In fact, DEL is one of the few codes which is still used, in spirit at least, for its original purpose. The only other non printing code which appears with the printing codes is SP. Strictly speaking, this is in fact a printing code but it prints a blank character. In fact, some special purpose printers do print codes for DEL and/ or SP. If you are on a very tight budget and find yourself with such a printer, a little careful work with a small file or dentist's burr should

make your printout easier to read.

Unfortunately, this world in which we live is far from perfect and great are the temptations to those with a weak will. There are all too many standards which are followed by all too few in the computer industry. The result is that ASCII has been nearly universally used in micros - almost!

Except for the simplest, few printers completely follow ASCII. The problem of printers not quite following ASCII is compounded by the fact that computers sometimes deviate from the standard. The result is not quite the chaos that might be expected.

Normally, ASCII values are used for the two alphabets (ie large and small letters), the numbers and space. The remaining 'printing' characters can be somewhat variable. This, of course, is the only way to include accented or special characters. This is the simplest type of variation to sort out and requires no further explanation other than that contained in the printer manual. The variations which cause confusion and despair are non-printing characters. These are commonly called 'Control Codes'. The functions defined by these codes in ASCII are included in the table for reference purposes and because they MAY be referred to in this way in your printers manual.

Fortunately, the Beeb follows ASCII fairly closely. The only difficulty arises from the "f" sign. In order to access this on most printers, use the " " sign.

There is one final point to be wary of: ASCII is a seven bit code. This may be seen from Table 1 in which you will observe that the most significant bit of the binary code is always zero and so there are only eight columns in the table instead of the sixteen which you might expect. All this adds up, you may realise, to the fact that there is a spare bit because eight bits and not seven are sent to the printer. The result is that some software and some printers use this bit. Unfortunately, this can cause a clash. This is not a difficulty with Perfect Software because it doesn't use this bit. Some printers, however, do use it. The result may be that you are unable to use certain printer functions or send some codes. I have not been able to discover a way to persuade Perfect Writer to set this bit.

This bit may be required for one of two purposes. Firstly, to send a set-up code to the printer. In this case, you could use a submit file and a VDU command. The other use may be to access additional characters during printing. For example, italics may be selected on Epson printers by setting this bit. Sometimes there are two ways of performing the same function. For example, on the FX80 setting this bit will cause it to print in italics but this may also be achieved by sending a control code. If this is not the case with your printer, without writing some special software, you will not be able to use these functions.

Having read this first part thus far but without the second part of this article you may feel inclined to jump in and give it a try - GO ON! The main points to watch are: make sure you have a back-up disc - NEVER make any changes to the distribution disc. The only other thing to bear in mind is to change things in small steps as this will allow you to relate the results to the information you enter.

Oh and finally, good luck!

Grahame Perchick

ACK	Acknowledgement	FF	Form Feed
BEL	Bell or other audible signal	FS	Information File Separator
BS	Backspace	GS	Information Group Separator
CAN	Cancel	HT	Horizontal Tabulation
CR	Carriage Return	LF	Line Feed
DC1	Device Control 1	NAK	Negative Acknowledgement
DC2	Device Control 2	NUL	Null, or all zeros
DC3	Device Control 3	RS	Record Separator (Reader Stop)
DC4	Device Control 4 (stop)	SI	Shift In
DEL	Delete	SO	Shift Off or Shift Out
DLE	Data Link Escape	SOH	Start of Heading
EM	End of Medium	SP	Space
ENQ	Enquiry	STX	Start of Text
EOT	End of Transmission	SUB	Start of Special Sequence
ESC	Escape	SYN	Synchronous Idle
ETB	End of Transmission Block	US	Information Unit Separator
EIX	End of Text	VT	Vertical Tabulation

Table of ASCII abbreviations

# ANSWERS TO EXAMPLES FROM THIS ARTICLE

0101 0110	152	6A	106	J	12
1110 0010	107	47	71	G	11
1010 0100	045	25	37	%	10
0100 0110	142	62	98	b	9
0001 0110	150	68	104	h	8
0101 0101	132	5A	90	Z	7
0011 1110	174	7C	124	I	6
1110 0101	127	57	87	M	5
0110 0100	046	26	38	%	4
0010 0111	164	74	116	t	3
1101 1100	075	3D	61	=	2
0001 0100	110	48	72	H	1
BINARY	OCTAL	HEX	DECIMAL	ASCII	EXAMPLE

## NEXT ISSUE

Hopefully, in order to get back on schedule, the next issue will follow very shortly. It will include more format information on the Juki and the second part of the article on PFCONFIG which finally gets to using PFCONFIG; the next part of introduction to the Torch System and more items on Perfect Software. In order to get it out swiftly, I shall exhaust my stock of articles - so PLEASE send articles now for issue number 4. We are, once again, very short of material, especially useful will be items relevant to the Torch but not on Perfect Software. If you would like to cover some aspect of Perfect not yet covered please do so - but we seem to be over emphasising this side of things - there is a lot to the Torch that is not Perfect! One aspect not yet covered is the use of Usbyte calls - how about it?



BINARY LSB	HEX LSB	0000	0001	0010	0011	0100	0101	0110	0111
		0	1	2	3	4	5	6	7
0000	0	NUL 0	DLE 16	SP 32	<del>Ø</del> 48	@ 64	P 80	' 96	P 112
0001	1	SOH 1	DC1 17	! 33	1 49	A 65	Q 81	a 97	q 113
0010	2	STX 2	DC2 18	" 34	2 50	B 66	R 82	b 98	r 114
0011	3	ETX 3	DC3 19	# 35	3 51	C 67	S 83	c 99	s 115
0100	4	EOT 4	DC4 20	\$ 36	4 52	D 68	T 84	d 100	t 116
0101	5	ENQ 5	NAK 21	% 37	5 53	E 69	U 85	e 101	u 117
0110	6	ACK 6	SYN 22	& 38	6 54	F 70	V 86	f 102	v 118
0111	7	BEL 7	ETB 23	' 39	7 55	G 71	W 87	g 103	w 119
1000	8	BS 8	CAN 24	( 40	8 56	H 72	X 88	h 104	x 120
1001	9	HT 9	EM 25	) 41	9 57	I 73	Y 89	i 105	y 121
1010	A	LF 10	SYB 26	* 42	: 58	J 74	Z 90	j 106	z 122
1011	B	VT 11	ESC 27	+ 43	; 59	K 75	[ 91	k 107	{ 123
1100	C	FF 12	FS 28	? 44	< 60	L 76	\ 92	l 108	! 124
1101	D	CR 13	GS 29	- 45	= 61	M 77	] 93	m 109	} 125
1110	E	SO 14	RS 30	• 46	> 62	N 78	^ 94	n 110	~ 126
1111	F	SI 15	US 31	/ 47	? 63	O 79	_ 95	o 111	DEL 127

Table 1

BINARY	OCTAL
000	0
001	1
010	2
011	3
100	4
101	5
110	6
111	7

Binary(->Octal  
conversion table  
Table 2

## WORK DIARY FOR PERFECT CALC

Introduction WORK DIARY is a skeleton spreadsheet for Perfect Calc in which a person's hours of work and expenses may be recorded for the seven days of one week. The information for the week is stored as one file, using the date of the first day of the week to construct the filename. Times are handled as hours and minutes, and the arithmetic necessary to add and subtract times is included in the spreadsheet. This feature is described in detail in appendix A. Times worked and expenses incurred are totalled for each day and for the whole week. A facility to identify different jobs or work categories by number is built in, and the hours worked and expenses for a selected job number can be totalled for each day and for the week.

Why a Work Diary? I am a freelance engineer and I find that keeping a record of the time spent on different jobs is particularly useful when preparing quotations for new jobs. For the same reason it is useful to be able to look back and see how long a job took. It is also reassuring, when looking back on a week in which nothing of significance appears to have been achieved, to be able to see that one did at least spend the time on something useful, even if it was only mending the car!

The spreadsheet design it would be possible to keep work diary records in varying amounts of detail, according to your exact requirements. This is reflected in the spreadsheet structure, which is geared to my own experience and use of a paper-based system over a couple of years. On average I find that I need five or fewer entries per day. This figure, together with the amount of information required in each entry, was my starting point for deciding the spreadsheet layout and file structure. If the sheet were very large then fewer disc files would be required, but disc operations on loading and saving the spreadsheet would be slow. If the sheet were small then a large number of disc files would be needed, and this might require the use of several discs for a whole year. The structure I have chosen uses one file per seven-day week. Sunday could be omitted if required, but its inclusion reflects the flexibility of working hours required of a self-employed person!

As an example a diary system for a solicitor must comply with fairly stringent requirements and in this case if many small files were used the cost of additional discs would be of secondary importance. Speed of access and the amount of information stored in each entry would be of greater significance. On the other hand, someone whose work is perhaps the same for whole days at a time might find it adequate to have just one entry per day, and to hold entries for a whole month in one file.

It is possible in this diary spreadsheet to specify a job number at the top of the last column but two, which will cause all entries with that job number to be totalled separately. Originally I hoped to have five or more such individual job totals, but the increase in recalculation time was prohibitive. At present it is necessary to select a job number and to note the totals for that job number on paper, or possibly to use the Print Region command to print just the last three columns. I think it unlikely that any user will choose to reprint the whole spreadsheet for every different job number.

It might be a good use of Perfect Calc to employ the Associate File feature to collect results from the weekly files into monthly or quarterly summary files. This would be difficult to manage, however, if extra entries had been inserted into the weekly files by means of Openup as the cross-references between files would then be wrong. An alternative is to have so many entry positions in the skeleton diary spreadsheet that it is never necessary to insert extra ones.

this can, however, easily make the spreadsheet unacceptably large and ponderous.

Detailed instructions you will enter information for the current week, and then write the file back to disc under a different name, related to the date of the week. The instructions below will take you through all the steps necessary to use the sheet, but "a picture is worth a thousand words", and in this case the "picture" is EXAMPLE.PC, on the disc, which you should use in Drive B. You may like to look at it before using the diary, or you may prefer to hold it in the computer simultaneously with the diary, in another buffer.

The WEEK DIARY skeleton spreadsheet is held in file DIARY.PC on the disc, which should be placed in Drive B. Put your Perfect Calc programs disc in Drive A and enter:

pc b:diary.pc

cont. on next page

## TORCH UPDATE

I am sure that by now most people will have seen Torch's advertisement for the Graduate. This allows you to upgrade a BBC model B to be IBM PC compatible. It connects via the 1Mhz Bus - unlike the Unicorn range which connect to the Tube. It does seem a very low cost entry into PC compatibility.

The Plus - 100 Software Pack is an upgrade for Z80 and Unix second processors. I have not yet tried it but the literature which describes it says that it contains:-

- New MCP 1.00 EPROM
- New CCCP 1.00 EPROM
- Standard Utilities Disc 2.0
- Hard Disc Utilities 4.0
- New User Guide

It is said to provide the following facilities:-

- Fully Compatible with MCP 0.41, MCP 0.50, and CCCP 0.94
- Supports Unix Host Software
- Supports new Acorn DNFS
- Provides faster disc access (up to 4 times faster)
- Allows variable sized hard disc partitions:
  - (1 to 4Mb CPN surfaces, 1 to 16Mb UNIX discs)
- Supports "autoboot" workstations and computers
- Provides new "Archived" status on files
  - (with new COPY and DIR options to support it)
- Provides new facility to see if station exists on TORCHNET
- Revised and extended Executive Aid

The upgrade comes in two versions for either Unicorn (ie Beeb upgrade) or Torch Business computers. Either package costs £65.00 and there is a reduced price of £55.00 if you order five or more packs.

Bob Gilkes has resigned as Chairman and Managing Director of Torch. His place is taken by Peter O'Keefe who becomes Chief Executive. He is Sales Director at Acorn and "will be on secondment from Acorn Computers Ltd. at the invitation of Torch's major shareholder Newmarket (Venture Capital) Ltd". This was announced in August '84. At Compec in November, Torch were represented on the Acorn stand and so I assume the marriage of the two companies has been consummated.

Grahame Perchick

WURK DIARY cont. from previous page

Perfect Calc will start up in the normal way and the spreadsheet will appear on the screen.

Change the recalculation mode to Manual. Recalculation time is about twenty seconds and it is a nuisance to have to wait this long after making every entry.

Move the cursor to the cell containing "w.c. ....". This means week commencing and you should use the Edit Entry command, CTRL-X E, to change "...." to the date of the Monday at the beginning of the week.

Next move the cursor along to the cell containing the filename, initially DIARY.PL, and change it to the appropriate name to identify the week, e.g. MAY17.PL.

Move down one row to the cell containing the date. Just to be absolutely explicit, this date is intended to be the date on which the file was last updated, not necessarily the same as any of the diary dates on the spreadsheet.

Now you're ready to make entries in the spreadsheet. I'll assume that you're starting at the beginning of the week, with entries for Monday. The format is the same for each day.

I add the date after each day of the week, e.g. change "Monday" to "Monday 14th May", but it is not essential.

The items to be entered in each row are as follows:

item	data type	notes
start time, hours	numeric	cell empty, initially
start time, minutes	numeric	" " "
end time, hours	numeric	end time echoes start time by
end time, minutes	numeric	means of an unlocked formula, until overwritten by data
job number	numeric	choose a system for numbering your jobs
client name etc.	label	this might be a reminder of the job title, the client's name, or a subdivision of the job
telephone call, /letter/visit	label	use these two cells together, e.g. "t t" = telephone call to
to/from	label	"l f" = letter from followed by details in the next cell
work done	label	
(time spent is calculated)		
expenses	numeric	petrol, postage, etc.

Each entry in the diary occupies one row of the spreadsheet, and initially

space is allocated for five entries per day. This can easily be increased by means of the Upenup command and the formula replication facilities. However it is wise to do this, if necessary, whilst there is at least one unused row remaining for the day in question. This enables you to Upenup above the last unused row and thus ensure that Perfect Calc includes the new entries in the daily and weekly totals formulae. Also it is convenient to use an unaltered row as the basis for replication of the formulae into the Upened Up rows.

Miscellaneous Notes When a number field is followed by a label field, e.g. job number followed by client etc., the number is right justified and the following text is left justified, so there is no space between them. In this case I enter a leading space in the label field to separate the two. I find this preferable to the insertion of an extra empty column between them.

The sheet is 100 characters wide and, if you wish to print the whole width of the spreadsheet at once, and your printer will allow it, then you should run PCCUNH16.COM to alter Perfect Calc's printer specification accordingly. This poses slight problems as the printer configuration will be held on the programs disc in drive A, whilst the diary spreadsheet as supplied will be in drive B. If you use the same Perfect Calc programs disc with several different spreadsheets on separate data discs then you may find that you have to alter the printer configuration frequently to suit the printouts of those sheets. Alternatively you may choose to copy the Perfect Calc program files onto the diary spreadsheet disc, with the appropriate printer configuration for the diary.

#### Appendix A: Hours & Minutes Arithmetic in Perfect Calc

Perfect Calc's library of functions enables this application to be implemented relatively easily. Mathematically the operation is trivial, amounting to little more than the correct handling of the carrying from minutes column to hours column. A printout of a portion of the diary spreadsheet is shown in Figure A1, in which the display mode is + (formulae displayed), but in addition the column widths have been temporarily increased to allow the complete formulae to be printed.

There are a couple of minor restrictions in practice.

a) 24 hour clock is assumed, otherwise an additional cell would be required for a.m./p.m., and the arithmetic would be very clumsy for Perfect Calc in this form.

b) The unlocked formulae in columns c and d are included so that silly answers are not given by the arithmetic at an intermediate stage, when the starting time has been entered, but not the finishing time. The formulae assume that no attempt is ever made to subtract a later time from an earlier one; no check is made on data for this. If I work past midnight (24h00m) then 1.0 a.m. becomes 25h00m and so on.

c) If, when totalling a row or column, consecutive vertical or horizontal cells are not being added, then the sum function cannot be used. In this case the formula tends to be very long, and an intermediate stage is required. This occurred in DIARY.PC at the bottom, in the totals for the week line. The minutes column is totalled first, then this result is used to calculate the correct total in hours and minutes at the bottom.

Vernon Webb

Two example files from Vernon's article are on the Sidelight Library disc Ed.

## NOT THE BEGINNING

How do I start my pages on a number other than 1?

There are two ways to accomplish this, depending on whether you are continuing your document on one disc or changing discs.

If you are working on a long document made up of several files on one disc, you will use the @include command to keep your pages numbered consecutively, your chapters numbered consecutively and any other document sections numbered consecutively. For example, if you are finishing up a file called "chap1.mss" and you want all the page numbers to follow properly on the next file called "chap2.mss" you would need to write at the very end of the chap1.mss file @include (chap2.mss). EVERY TIME YOU USE @INCLUDE BE SURE TO SPECIFY THE DISC DRIVE WHICH WILL CONTAIN THE DISC WITH THAT FILENAME - generally, Drive B. Then save the file called "chap1.mss" and go on to write the file called "chap2.mss". For the file following "chap2.mss" to be numbered properly use the @include (file name) command again at the very end of chap2.mss. For all the page numbers of all the files on the disc to be consecutive, continue to use @include followed by the name of the next file at the end of every file.

One other note of caution - when you use @include at the end of a file and you want the next file to begin on a new page - be sure to use the @Newpage command BEFORE you write @include (B:filename).

Perfect Writer considers these files which are "linked" with the @include command to be connected when it comes to formatting the document. When you are ready to format and print this document all you have to do is call up the name of the very first file. Perfect Writer will read the @include command and after formatting the first file it will continue to format all the @include files. You will print all the files by calling up only the first file. Perfect Writer will include all the rest.

Sometimes a document is very long and takes up more than one disc. In that situation you would want your page numbers to begin with the page following the very last page number on your last disc. To accomplish this use the @Set (page=?) command, replacing the ? with the number of the last page of the previous disc. Place this command at the BEGINNING of the first file on this new disc. You will also want to use the @Set command for chapters, sections, subsections, paragraphs, appendices and appendix-sections. Simply replace the "page=?" with "chapter=?" or "section=?" etc. each time substituting the last chapter number from the previous disc or the last section number or whatever. Perfect Writer will then start the numbering sequence with the correct number. Continue to use the @include (filename) for all the files on this disc.

Torch Computers Ltd

## GRAPHICS DUMP

I have received a couple of requests for a graphics dump programme to work from Torch with an Epson FX80. Does anyone know of a suitable programme? If it's public domain, I'll happily include it on the Sidelight library disc.

## RIGID v FLOPPY

Torch have recently announced the availability of rigid disc as an alternative to floppy discs - see Visit Report in issue 1. This is not intended to be a review of the Torch system as I have not yet had the opportunity to try it. Consider this to be a general introduction to the advantages and disadvantages of rigid discs versus floppies.

Rigid discs come in two varieties, fixed and removable. As the names suggest, a fixed disc stays in its drive. One can also obtain rigid disc drives with a combination of fixed and removable discs. Rigid discs are sometimes called "hard discs" or "Winchester" discs. This latter name is frequently abbreviated to Winnie (Ugh!) Although, strictly speaking, Winchester discs are always fixed, the name is sometimes applied to any small rigid disc including removable ones. As with many buzz words, the exact meaning of Winchester is somewhat hazy and Torch, wisely perhaps, do not apply it to their product.

The cost of a rigid disc drive is substantially higher than that of a floppy. The capacity of a rigid disc is very much greater than that of a floppy, however, and this results in a much lower cost per byte for a rigid disc. In the case of the Torch drives, the rigid disc drive costs about £2000 and one could estimate a cost of about £500 for the twin floppies. As the Torch hard disc has a capacity of 20,000,000 bytes compared to 800,000 for twin floppies, the cost per K byte (thousand bytes) for the hard disc is thus ten pence. For the floppy drives, the cost per K byte is sixty two and a half pence ignoring the fact that we can use multiple diskettes in one drive. This does not include the cost of the media (the floppy discs themselves). If one takes the cost of the media at £4 per disc, into account, the cost per K byte is sixty three and a half pence. This of course assumes that one requires 20M bytes (20 million bytes) of storage on-line. It is purely theoretical with the Torch, however, as one is limited to two floppy drives only - 800K. One can, of course, have infinite storage available by the use of an infinite number of floppies and as long as you don't mind the time it takes to change discs, the cost per K byte of floppy storage is about one penny plus the cost of the drive. Thus for the same 20M bytes of storage using just a twin drive, the cost per K byte is 0.035 pence. It all depends on whether you talk to a floppy disc drive salesman or a hard disc drive salesman!

To summarise:

MEDIA	COST FOR 20M BYTES	COST PER K BYTE
Rigid	£2,000	10 pence
Floppy On line (ie 50 drives)	£50,000	62.5 pence
Floppy Off line (ie 2 drives)	£650	0.035 pence

One cannot, however, look at cost alone when making such a comparison. Winchester discs normally operate much faster than floppies and should be more reliable.

It matters not, however reliable a hard disc may be, the day will come when there is a failure. Whether or not the data on the disc may be recovered once the system is up and running again depends on the cause of the failure. It is even more important, therefore, to back up hard discs regularly than with floppy discs. If you lose all the data on one floppy disc, it could be extremely inconvenient but if you have a hard disc and lose all the data, it could be a major disaster.

The normal way to back up a hard disc is to copy it on to floppy discs or a

tape. Backing up on to tape is certainly the fastest and simplest method taking a few minutes, and for Winchester discs, a cartridge, about the same size as a video cassette is commonly used. A tape cartridge drive is much more costly than a floppy disc drive - and of course one requires suitable software to go with it. The snag is that because tape cartridges cost about £20 each and there is little standardisation of format, they are not used to distribute software. Even if one had a tape cartridge, a floppy disc drive would therefore still be required. There is at present no tape drive available for the Torch so this discussion is once again somewhat academic.

Backing up on to discettes can be a problem but should not usually require fifty diskettes. The reason is twofold; firstly, certain files on the hard disc will not normally be changed - these are items such as the operating system (more of this later) and the other systems files eg. Perfect software. Secondly, of the files which do change there should rarely be the need to change all of them between back-ups. For example, if you have a data base, the data files may be frequently updated but the template/format files should be fairly static.

It is possible to automate the process of selecting files for back-up. This may be done by a programme which keeps a list of every file to which you write - obviously if you don't write to a file, you don't change its contents and hence need not back it up. When you decide to perform a back-up, the programme will only back up those files in its list. Several other methods are possible including date stamping files.

Another method of reducing back-up problems is to be selective in what you store on hard disc. You will find that it is a good idea to do this anyway or you soon run out of disc space. Obviously, the precise split of what goes on hard disc and what goes on floppies depends on your particular circumstances. In the case of Sidelight for example, material for the current issue could go on hard disc with letters going on floppy and perhaps incoming material for future issues on floppy. Then, when an issue is published, the back-up for it could be archived, the files relating to it on the hard disc deleted and we could start once again. The database of members, of course, would be on hard disc.

Archiving is also required with a hard disc. This consists of transferring files to a floppy disc for permanent storage before they are deleted from the hard disc. The methods are similar to those required for backing up.

So far, the only advantage I have given for using a hard disc is convenience. There are, however, other more important advantages. For example, if one is using Torchnet to link two or more machines, one can have a hard disc which is shared and used for common data. Another advantage is the ability to use the Unix operating system. Unfortunately, this requires a 68000 and will not run on the Z80 in the Disc Pack. One can, however, buy the 68000 complete with a hard disc to add on to the Beeb. Unix is a far more powerful operating system than CPN (MCP) and there should be some pretty impressive software available for it. It would not be practical to run Unix on floppies. One further advantage is that one can store far larger files on a hard disc. One is effectively limited to less than 400 Kbytes for a single file using floppies. This is pretty large but there are many databases which greatly exceed this size. There are also some large programmes which won't fit on a floppy and other programmes which manipulate large amounts of data, eg. Computer Aided Design.

Is a hard disc going to be cost effective for you? I'm afraid that you will



have to decide that for yourself but if you wish to run certain programmes or maintain very large files, it may be the only way. Even if this is not the case, do not under estimate the speed advantage - you simply don't have to wait while a programme or file is loaded. The only major disadvantage, apart from cost, is that you must have a disciplined approach to backing up but there are tools available to help.

Finally, if, unlike me, you are fortunate (?) enough to have access to a Torch hard disc, how about letting the rest of us know what its strengths and weaknesses are.

Grahame Perchick

## FW AND THE JUKI 6100 PRINTER.

The Juki 6100 daisywheel printer is a budget priced machine that provides excellent results with Perfect Writer. For those contemplating buying one, or having trouble configuring FW for a Juki, the following is tried and tested! First, switch off all the Juki's dip-switches. Don't forget that \*FX5,1 is needed, as the Juki is a parallel printer (it is best to put this command in a BEGIN.SUB loader program, as shown in the first issue of Sidelight). Then call up PFCONFIG and use the following printer definitions in answer to the numbered questions in PFCONFIG:

1. 21590 (for 8.5" paper)
2. 26670 (for 11" long paper)
3. 212 micas
4. 423 micas
5. 21 micas
6. 53 micas
7. No
9. No
10. 0
11. 2
12. Yes
13. Yes
14. Yes
15. 1
16. No
- 18, 19, 20, 21 - leave these blank
23. "LW
24. "L&

This is all assuming the printer is set for 12 cpi (characters per inch) spacing. It allows use of the boldface facility on the Juki, but it does not allow the use of proportional spacing. Like many other printers, the Juki has a nice facility for semi-automatically feeding in single sheets of paper down to about one inch below the top edge of the paper - but if you use this you will find that FW adds about another three-quarters of an inch! If you want the printer to start printing where you have positioned the paper then change the default HEADERSPACING parameter (in PFCONFIG's default style parameter section) from 3 lines to 0 lines.

Tony Glaser

## CONVERT YOUR LORCH TO A BEEB

Now that you've finally taken the plunge, spent a small fortune on a Lorch Disc Pack, and converted your Beeb to a CP/M compatible machine able to run sophisticated, expensive software, let me tell you how you can convert it back again for very little money indeed.

At first you may wonder why it is that anyone would want to turn their Lorch Disc Pack (or LDP) to those of us not used to coping with three whole words at once! back into a BBC. There are several answers. One reason is the BBC Basic, which really is one of the best Basics around, and, even after you've made your upgrade, it's still likely to be the only language you have to program in. Another reason may be software. Not, you'll understand, that I think that anyone serious enough to buy the LDP is likely to want to go around zapping aliens for points. But it just might happen that someone's son or daughter takes exception to being deprived of a particularly barbarous piece of software that runs on the Beeb.

The BBC Microcomputer, on its own, tries to cram a great deal of activities onto one chip: the 6502. Generally this works quite well, but different functions, such as the screen memory and the Basic program, compete for space. The more complex the screen (80 column, high resolution - hires for those of us who can't even handle two words - and lots of colours) the less space there is for the Basic Program. One of the things the LDP adds is a full 64K of memory, this time on a 280 chip. The 280 now runs your programs, leaving the 6502 to handle the screen (keyboard, printer, discdrives, etc.) without worrying about space.

Unfortunately, although 280s and 6502s can talk to each other, they speak different languages, so all the programs designed to run on the Beeb alone, must continue to run on the 6502.

Getting the computer to run as a BBC again can be achieved in a number of ways. On LDPs with the CPN rom this is easy. Just type BASIC (or give the star command \*B.) and you're ready. Provided your BBC also has the Disc Filing System (DFS) installed (not actually required for the LDP to function) you now have a BBC B with 80 track disc drive. Just like everyone else's. Returning is another star command: \*CPN.

The arrival of the MCP rom gave the 6502 some more things to do associated with any possible network requirements. As a result there is very little space left. Regaining this space is a matter of resetting certain pointers in the Basic system, and this is achieved, after entering Basic, by typing B<BREAK> ie. holding down B and immediately pressing <BREAK>.

MCP also assumes that the BBC should be set in its tape filing mode, rather than disc, as on CPN. This ensures that BBC and MCP discs don't overwrite each other, as easily happens with CPN. If you're not careful, the BBC's DFS will happily write all over Perfect Writer without a second thought. So, taking great care, type the star command (\*D.) and you will be in the in the disc mode. (By-the-way, the BBC sees four drives, numbered 0,1,2 and 3, for MCP's two. Drive 0 and 2 are both sides of MCP's A drive). \*MCP is the return command, although <CTRL><SHIFT><BREAK> all at once, will also return you, and in 80 column mode, too.

Star commands provide an interesting second route to the BBC. Essentially, all commands which start with a \* are passed straight to the Beeb's Command Line Interpreter (CLI), even from CPN (or MCP), and this has the job of sorting out

what should be done with them. A demonstration of this is the use of \*IX calls which continue to be accepted on the IUP. But so do other, less appropriate commands. \*CUI (or \*.) will give you the directory of a BBC disc or tape, without typing BASIC at all (although, if you don't actually have a BBC disc there, the rubbish - or hang up if tape - you do get is not really worth the effort). Similarly \*TYPE, or \*EXEC and \*SPOOL (one way to transfer files there!) or any of the others in the \*HELP DFS list, also work.

Most interestingly of all, \*LOAD and \*RUN continue to work as they always have. So typing \*RUN BUGZAP (or even \*BUGZAP) will still run the same 6502 machine code program it always did, and there's no need to make a single modification (except to be sure that, if a disc, it is protected so that you do not accidentally overwrite it - although that would probably be no bad thing).

The only real expense in this conversion job comes when you decide to upgrade your IUP with BBCBASIC(280). This is a jolly good implementation of the original, but in 280 machine code to allow it to run on the Torch processor. It is marketed by M-TEL (tel Norwich 8/0620), who do a non-graphics version for other CP/M machines. For a bit over one hundred pounds, the Torch version gives you all the flexibility of BBC Basic, including graphics, but reading and writing to Torch files, and without being limited to 31 files per surface. It even has a more or less similar assembler, only this is a 280 assembler.

Many pure Basic programs will transfer completely using \*SPOOL and \*EXEC to make the move, but, of course, 6502 machine code will not. Similarly, neither will programs that expect to find the screen or the keyboard on the same processor (you can't PUK\* - or should it be ? - a character straight to the screen). Never the less, if your divorce from the BBC has been less than absolute, here's a real chance to make a break.

The really good news is that 280 Basic is now being distributed in the free bundle along with Perfect Software. On the other hand, if you're one of the legion that have already bought your IUP, perhaps it's not such good news after all.

## PERFECT VERSION II

Goff Sargent

One essential point to note is that Perfect Software Version II will not run under CPN, only under MCP. Another possible snag is that there is no separate P60.SUB. The function keys are set up from within the Perfect Software but under your control via PWCUSTOM. This means that you can no longer tailor the function keys in quite the same way. However, Bob Jones' contribution to the Sidelight library disc will allow you to re-define the codes Perfect Writer expects - see the library pages.

Of course, there have also been improvements. PWCUSTOM is probably the greatest single improvement. This allows the Delete key problem to be solved and as its name suggests, some other customisation as well. The reason that Perfect Software now sets the function keys internally is to avoid the need for you to call P60 before Perfect Writer. Another improvement is that the Epson printer definition has been rewritten for the FX80. Finally, I am told that the files are better organised on the disc.

Note that PWCUSTOM is on the Perfect Filer disc because the Perfect Writer disc is full.

All new systems shipped by Torch since April 1984 have Version II Perfect Software. If you are unsure what version you have, look for a file named P60.SUB. If it is absent, you have Version II.

Grahame Perchick

## INTRODUCTION TO THE TORCH SYSTEM

In our previous issue of Sidelight, I started to explain the hardware in the Beeb and Torch add-on. That article was more of an introduction rather than an in depth description. In this article, we start to look at the software - or to be more accurate, the firmware. The starting point for this is the Beeb's firmware and how it interacts with the Torch firmware. The more detailed description of the Torch firmware will start in the next part of this series.

I shall begin this article with a brief recap. We saw in the previous article how there are two types of memory: RAM which may have information, data or programmes written to it or read from it; ROM which may only be read. In fact we saw how the Beeb has two areas of ROM; sideways ROMs and the MOS. We also learnt why at least some ROM is (very nearly) essential in order to get things going when the computer is switched on.

Let me now explain the terms Software and Firmware. Software, as I am sure you are aware, is the programmes which instruct the computer what to do. Firmware performs a similar function but it resides in ROM instead of the RAM in which software resides. The advantage of firmware, of course, is that it is always available even when the computer has just been switched on. This advantage is the cause of its disadvantage - it permanently takes up room within the computer. Even using the sideways ROMs there is a limit of how much firmware we can have within the Beeb.

The choice of what to have in firmware and what to have in software is a combination of personal requirements and technical considerations. From the personal point of view, those programmes which are used most frequently are most usefully put in ROM. Because Torch systems always have discs, programmes can be loaded fairly fast. The Beeb was designed to be used either with a tape or with a disc and it is tape users who benefit most from the use of firmware.

From a technical point of view, certain programmes have to be in ROM. An example is the MOS. One cannot always transfer purchased programmes from disc to ROM even with the necessary programming equipment.

Although I have been referring to ROM (Read Only Memory), it will normally be EPROM (Erasable Programmable Read Only Memory). The difference is that the programme in ROM is fixed during manufacture. The programme in a programmable read only memory (PRM) is written into the memory after manufacture but cannot be erased and reprogrammed. The programme in an EPROM is written after manufacture and the device may be erased by exposure to ultra-violet light. After this, it may be reprogrammed. For simplicity, I shall normally refer to all three types as ROM. EPROM is frequently the preferred technology due to cost considerations.

The combination of Beeb and Torch contains the following ROMs: MOS, BASIC, CPN/MCP, CCCP (on the Torch card) and DFS.

I shall briefly describe each ROM in turn, followed by the Power Up sequence and finally, the way in which they interact during normal operation.

My description starts with the MOS - without which the Beeb can do nothing. The MOS performs two functions. Firstly, it interprets commands from the operator which are entered via the keyboard. It also interprets commands from programmes. These commands control the fundamental operation of the system.

Examples are "MODE" and "VDU" commands also certain \*FX commands.

Its second function is at a lower level, invisible to the operator, controlling the keyboard, mass storage and screen etc. In fact these two functions are so entwined that it is not truly possible to consider them separately.

Do not be misled when I say the MOS or any other ROM does something. In reality, the ROM only contains a list of instructions for the microprocessor to perform the required task.

The BASIC ROM should not require any lengthy explanations for most readers. It converts English-like instructions into a format which the microprocessor can understand. An interesting philosophical point is that computers, via an interpreter such as BASIC can convert human understandable code into computer understandable code. It is not always obvious what is performed by the BASIC ROM and what by the MOS.

The DFS ROM controls the disc drives only when in the Beeb mode. It is not used by the Torch processor. Once again its functions are entwined with those of the MOS. The two components in the Beeb which together are analogous to CPN are the MOS plus DFS. MCP performs all the CPN functions plus network control when required for Torchnet.

Although the ROM in the Beeb is called CPN it is in fact only one component of the CPN operating system. The second component resides in the Torch and is referred to as the CCCP. The CPN chip performs similar functions to the DFS. The CCCP's tasks are similar to those of the MOS. More information on the Torch ROMs will appear in future articles.

It is interesting that depending upon what their function is, Sideways ROMs, eg the DFS, can be considered an extension of the MOS. The MOS controls the tape filing system but when a disc is added the DFS performs the low level control of the disc. On the other hand, the MOS can be considered an extension of other ROMs - eg BASIC. When running in BASIC, many commands are performed by the MOS although they are sent by the operator to BASIC.

The logical place to start a description of the way the ROMs interact is what happens when you switch on the Beeb. First, however, may I remind you that even programmes in ROM require some RAM for various purposes. For example, the DFS must be able to buffer one sector of data from the disc (a sector is the smallest amount of data which may be read from a disc). The DFS must also save information such as the drive that is currently in use. As we have already seen, one sideways ROM may call another sideways ROM to perform a service - for example the BASIC ROM will call the DFS ROM when it requires access to a disc. This could potentially cause problems because the DFS might overwrite part of the RAM being used by the BASIC ROM. In order to avoid this, when the Beeb is switched on, the MOS allows each ROM in turn to claim any RAM it requires.

Every ROM will not in fact claim all the RAM it will ever use; for example, word processors and BASIC will use any memory left when they actually start to run. This explanation is greatly simplified due to space restriction but should give an idea of some potential difficulties and also explain why when returning to BASIC from CPN there is a shortage of RAM.

When you switch on the Beeb, therefore, the sequence is as follows:-

- (a) There is a Power On Reset interrupt. This is generated by the hardware and causes the microprocessor to start executing the MOS code.
- (b) The MOS sets various default values into RAM and claims some RAM for its

own workspace.

(c) The MOS then calls each sideways ROM in turn to allow them to claim their RAM. The ROMs are called in order of priority. The ROM on the far right hand side has the highest priority and hence is called first. The ROMs identify themselves on a screen as each is run.

(d) The MOS then starts the highest priority ROM. In a standard Beeb, this will of course be BASIC. In a Beeb + Torch, it will depend on the location of the ROMs. It could be BASIC or CPN. If it is CPN, control in fact passes to the Z80 second processor and the MOS continues to run in the Beeb.

We can now examine how the ROMs interact once the system is running. In the case of a standard Beeb, the system will start in BASIC. Let us assume that we have a disc system but we will ignore the Torch for the moment.

On the screen are the start up messages from the sideways ROMs and BASIC then prompts the operator for input. The operator may now do one of three things (if we ignore such options as switching off again etc.)

- (a) Send a command to the MOS. For example, MODE 2 or LOAD "MYPROG".
- (b) Type in an immediate BASIC instruction. For example, >PRINT 36\*18.
- (c) Type in a BASIC programme. For example >10 INPUT A,B >20 PRINT A\*B

If the operator has chosen (a) or (c), he has the additional choice available of running the BASIC programme. Of course, entering CHAIN"MYPROG" performs two steps at once.

Let us now see what happens if you had chosen to enter a MODE command. The BASIC interpreter recognises this as a MOS command and so passes it to the MOS. The MOS knows what to do, gets on with it and once it has finished, returns to BASIC. The MOS in fact does not know that it was called from BASIC, it merely goes back to the programme which called it.

That was a fairly simple example because the MOS was able to perform the command by itself. If the command had been LOAD, it is somewhat more complex because BASIC recognises LOAD as a MOS command. The MOS must then instruct the DFS which gets the data from disc, eventually control is returned to BASIC via the MOS.

Two points must be born in mind. Firstly, the Beeb can only run one programme at a time. As I have explained, it can switch between programmes. This can be very fast because the computer performs thousands of instructions every second and so it may appear that the computer runs more than one programme at a time. If we include the Z80 board, we have two computers and so we can, and indeed do, run two programmes at once. The other point is that each programme will call another which may call a further programme but the called programme does not know from where it was called. When the called programme finishes, it simply returns - it knows not to where, via an address saved when it was started.

There is another form of interaction between the MOS and the sideways ROMs which is slightly different to that so far described. As yet, the MOS must recognise all commands it receives. To make the system more flexible, there are "\*" commands. These take two forms: those which the MOS performs and those which Sideways ROMs perform. Any command line which starts with a "\*" is assumed by BASIC to be a command to pass to the MOS. Some of these commands are acted on by the MOS - for example, all the \*FX commands. There are others which the MOS will not recognise - for example, \*DRIVE. When the MOS receives an unrecognised command, it offers it to each Sideways ROM. Once again, as at power-on, in order of priority. If none of the ROMs recognises the command,



the MOS will issue an error message. If a ROM does recognise the command, it will do what is required, returning control to the MOS which will in turn return control to the calling programme.

My intention in this article has not been to describe the detailed function or operation of the ROMs but simply the way in which they interact. This is particularly important in order to understand the way in which the Torch interacts with the Beeb.

The Torch chip which resides in the Beeb is CPN/MCP. This performs a similar function to the DFS but does have additional functions. The only time CPN/MCP is called by the Beeb is at power-up as already explained and when the MOS tries to find a ROM which answers to CPN/MCP.

When CPN/MCP receives its call to start running, it calls the Torch card via the tube and then.... and then.... well Torch don't seem to say but I would assume that it returns to the MOS perhaps telling it that the tube is now in use. The CCCP which is the firmware on the Torch card now runs and passes commands down the tube to the MOS. The MOS treats these commands in the same way as commands received from a Sideways ROM.... I think. It is possible, however, that it is CPN/MCP which first receives commands down the tube, executing those it recognises and passing on any unrecognised commands to the MOS.

The CCCP is in fact fairly selective in which commands it passes down the tube. It will pass down a command line which commences with a "\*", or with a known command. This means that "MODE 7" will be passed to the MOS because the CCCP recognises the command "MODE". MODE7 will not be passed to the MOS because it is not a recognised command for the MOS. Instead, it will look on the currently logged on disc for a programme named MODE7.COM then for a programme named MODE7.SUB. As it finds neither, it returns an error message. If you enter "\*XYZ", you will still receive an error message but it will originate from the MOS.

The final and rather mind boggling level is what happens to commands from BBC BASIC Z80. This operates rather differently from BASIC on the Beeb in order to appear similar. It looks for commands which are to be passed on to the operating system but it must decide to which operating system to send them. If the command is a CPN command, eg \*DIR, BBC BASIC Z80 passes it to the CCCP which will, for most commands, pass it down the tube to the MOS which will pass it to CPN. If BBC BASIC Z80 decides the command is for the MOS, it directs it to the MOS and of course it arrives via the tube. The MOS will either process it itself or try to find a ROM which recognises it.

Before delving into CPN in our next article, we shall be looking at CP/M. With this background knowledge, it will be possible to understand the reason for some of the more bizarre aspects of CPN.

Grahame Perchick

## IF YOU MOVE

Let us know your new address and telephone number together with your membership number if you move. If we are NOT AWARE OF YOUR NEW ADDRESS, don't blame us if Sidelight stops arriving!

Please note:

The opinions expressed and the technical information given are the opinions of the authors. Sidelight has not checked and can accept no responsibility for these views. Nevertheless, the editor reserves the right to edit any material submitted for publication.

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