

S I D E L I G H T

The journal for Torch users

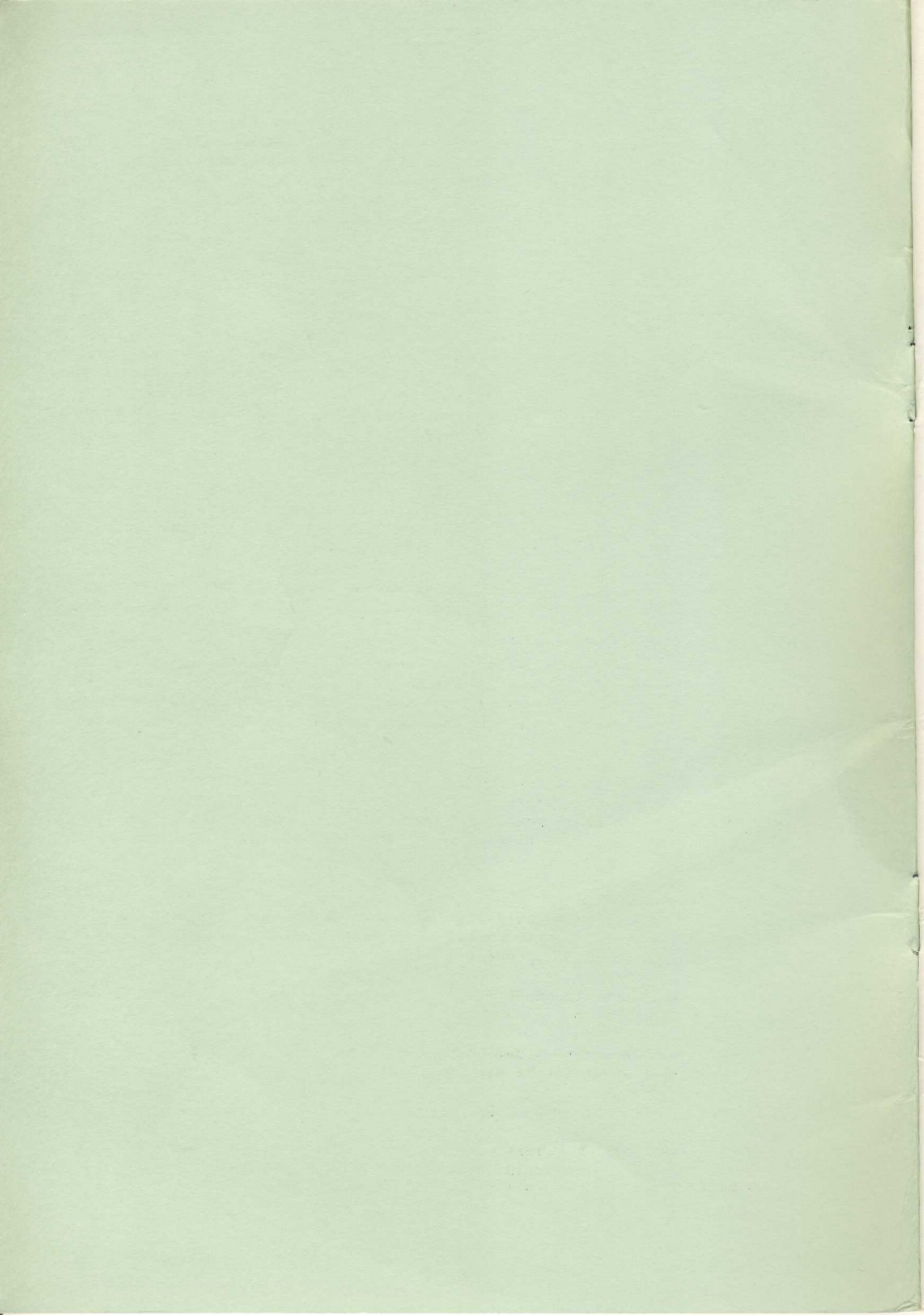
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Editorial

Welcome to the first issue of Sidelight. Publication has been greatly delayed due to a lack of publishable material. I had written a long tirade complaining about this and urging our readers to communicate with us - this is after all the purpose of the journal! Since sending out a letter asking for articles, however, although I have hardly been overwhelmed with material, I have been able to put together what I hope you will agree is a respectable first issue.

Many thanks then to our contributors. I have received a couple of articles too late for inclusion in this issue and they will of course appear in the next issue. Please keep the letters and articles coming in. It really is essential that we receive more articles. It doesn't take a great deal of time to write a single article, but to write sufficient material to fill a complete issue, answer and collate letters, process subscriptions and get it all printed and posted is very time consuming. It also makes for a boring read! Please, therefore, may we have your experience and views. We have a very wide readership and it is most unlikely that there won't be at least a few people with interests common to yours.

I have been most intrigued to discover the wide range of members which we have. Included are, of course, mainly small business men/women and hobbyists. The variety is, however, staggering: from professors to sixth form students and from Reverends to a wine bar owner.

Our membership at the time of writing is around fifty but once I have posted this issue, I shall start to actively recruit once again and would hope to double this number before the next issue.

There are a number of projects we may embark upon when the size of our membership justifies it. One service which I believe would be very useful would be a Bulletin Board System (BBS). Only a few of our members have modems and so to make it most useful, it will probably be open to members and non-members.

Information on modems and operating instructions for our BBS should be included in the next issue of Sidelight. I would imagine that the sections on the BBS will be split between those accessible only to Sidelight subscribers and those accessible to all comers. A time limit is common and this is likely to be more generous to members.

The major sections might be:

- Public notices which would allow messages to be sent to anyone who may care to read them. These could include For Sale, Wanted and Best Price Seen - for computer equipment and supplies.

- Private messages to Sidelight which would include a facility to send software and articles.

- Private messages from Sidelight in response. This could include public domain software for you to download.

- Private notices between BBS users.

- Help files for compilers and utilities, for example for BBC BASIC (280) etc. This would allow prospective purchasers to obtain a preview of the manual and the software capabilities.

A catalogue of Public Domain software.

A small selection of programmes which could be downloaded free of charge. These would be regularly updated and could include a "requests" section.

It would also be possible to publish parts of Sidelight on a more frequent basis.

The advantages of this sort of arrangement are fairly obvious. Provided use is made of the low rate periods for phone calls, it need not be expensive even for non local callers. We will of course make suitable software available to members to use the KBS.

The service would start in a fairly limited way with perhaps just simple message passing facilities and only at certain times. The more it is used, however, the faster it will be expanded.

A service which we can already offer members is format translation of discs and installation of software on to the Torch. As you are aware, discs for a computer must be on the disc in the correct format, this varies from computer to computer. Much of CPM software will run on the Torch if on a Torch disc. We can have translations made from many types of disc to Torch format.

For a price, please let me have details of the discs you want copied, what computer they operate on etc. We must obtain from you in writing a statement that you are authorised to copy the software. The cost varies from a nominal sum, if it is software which will be donated to our software library to a maximum of about £20 all inclusive.

Of course, getting the software on the correct format disc is only half the story. A great deal of software will require installing on the torch to make it function correctly. We can also perform this service. Let me have details of the programmes and I will send details of cost.

I have received a few queries about the compatibility of various Beeb ROMs with each other and with the torch. At present it is difficult to answer these questions, but at some point, we shall distribute a questionnaire on the subject. This information will place us in a much better position to answer these queries.

It seems that a number of subscribers would find a tutorial session very helpful as dealers offer no training. I believe that such sessions would be most useful if limited to the number of people who could sit around a single system - say five. Anyone interested in spending one day, most probably a Sunday, at such a session, please let me know. A commercial rate will be charged.

When you write to Sidelight, please help by sending your communication on disc. Most people send word processed letters anyway. Even for those who send hand written letters, it does not require a great deal of extra effort to get a single letter on disc but we handle numerous letters. Letters which we type on to disc, especially if hand written, is time spent which could be more usefully applied. If you have word processing software which runs under CPN, there is no problem. Simply include the original file which you typed in and also "print" a copy to disc. We can then select the most suitable one. If you only have word processing software on the Beeb, the same procedure should be followed so that you have the original file and a copy "printed" to the disc. These two files may then be transferred to Torch format using RDACORN. This

programme is on the Torch System disc. To use it, simply type RDACORN with a Torch System disc in drive A and follow the instructions.

It also saves considerable time if you use the convention of naming your files with an extension (that is the three character part after the full stop) which consists of the last three digits of your membership number. For example, if your membership number is 1107 your filenames could be:

| | |
|---------------|------------------------|
| LETTER1M .107 | Manuscript letter file |
| LETTER1F .107 | Formatted letter file |
| ART1 M .107 | Article 1 Manuscript |
| ART1 F .107 | : |
| ART2 M .107 | : |
| : | : |
| : | : |
| etc. | etc. |

Please include your name, address and telephone number in the "LETTER" file and, of course, label the disc with your name and membership number. When sending queries, please include an SAE label for the return of the disc and answer. When sending an article, please include a return address label. A printout of letters and articles is, of course, also required.

In order that we might reformat material from discs with minimum effort when you write letters or articles to us, would you please observe the following formatting rules with Perfect Writer:
Do not use Style commands.

Titles for articles must not be more than thirty three characters and spaces. Short titles also have more impact. The title should be in bold, thus, **@B(Title).**

This issue has seventy nine characters and spaces per line - ie seventy nine columns. Depending on the printers we use for future issues - and comments from readers, we may reduce the page width to to forty seven columns. Please bear this in mind if you include fixed format text eg. tables or listings. It is obviously safest to assume forty seven columns if possible.

Tables, listings and other fixed format text should be Verbatim eg.

@BEGIN(VERBATIM)

This could

be a

listing or

table.

@END(VERBATIM)

If you wish to emphasise text, please underline it eg.

@U(This is to be emphasised).

Never use Bold text in an article. If essential, you may use italics but we are trying to keep italics for editors notes.

Please leave one blank line between paragraphs.

Your name should be at the end of the article thus:

@FLUSHLEFT(Grahame Perchick).

Please use only the commands indicated above.

I realise that this is somewhat restrictive and can involve a small amount of extra effort on your part. It will, however, save many hours of bad language

on my part and will greatly enhance the equanimity of my household. When I am able to, I shall ease these restrictions.

If in doubt, please ask!

It really takes only a little of your time to follow this procedure but when you consider the amount of mail we handle, you will realise that it saves us a considerable amount of time.

Finally, to summarise:-

Send a disc with (filename). (membership No. last three digits)

- (a) A manuscript (unformatted) file
- (b) A formatted (printed to disc) file
- (c) Your name, address and phone number in a letter file
- (d) A label with at least your name and membership number

Also include

- (e) A printout of letters, articles etc.
- (f) An S&T label for queries or an address label for articles.

If sending more than one printout, it is helpful to include the filename on the printout. Most people already follow this procedure except for including their membership number in the file name.

I must apologise for any delay in answering your letters but I am, more or less, up to date now and should be able to reply rather more quickly.

I am very keen to build up a library of public domain software especially if it uses the Torch facilities. All donations will be gratefully received. Any software you wish to donate must either be in the public domain already or you must own the copyright. Please always include your name, address and membership number in all communications to us.

I have still been unable to unearth a suitable 8" CP/M system. So if anyone knows of the whereabouts of such a system at a reasonable price, please let me know. It is required for format translation and our proposed Bulletin Board.

I hope that there is much to interest all our readers in this issue but if you feel there is something lacking or there is anything that you do not understand, please let me know. It is only by receiving this sort of feedback that I can ensure that everyone is kept informed and happy!

Finally, I must emphasise once again the need for articles. We will publish any articles and reviews of interest to Torch owners. To give you an idea of the sort of subjects, how about reviews on: BBC BASIC (Z80), Cardbox and F&Forth. I know of a number of readers who would be interested in these particular programmes. We have available a very powerful computer in the Torch but information is rather short. It is only if we disseminate as much information as possible that you will realise the full potential of your system. Don't assume that most people know more than you and hence you have nothing to offer. This is most unlikely - I'm learning about my system daily. I am currently spending most of the time I have available on Sidelight writing. This is clearly undesirable and if I am to get the projects started that I have mentioned above, I must receive more articles.

Grahame Perchick

Letters

WATFORD DFS

I noticed your letter re the formation of a Torch User Group in the February issue of Acorn User. As a Torch user, I would be very interested in joining such a group and in receiving any information you may have garnered and distributed so far. I imagine I am the only Torch user within a couple of thousand miles, so advice is pretty hard to come by, and so far Torch, themselves, have failed to respond to a User Fault Report and two letters! (Is this typical of them or is it that I am remote enough for them to safely ignore me?)

Let me tell you a little about my system and some of the discoveries I have made in the process of getting it to operate.

I have a BBC Model B with 1.2 DS and an Issue 4 circuit board, plus a Watford DFS version 1.3 and the Torch Z80 Disc Pack (MCP version 0.41). This is being printed via Perfect Writer and a Juki 6100 printer.

Initially, the BBC/Torch system refused to do anything at all - on power-up disc drive 1 immediately started to run, a continuous beep was emitted, and the entire keyboard (except for the break key) was dead. This stalemate lasted for about a month, while I checked and rechecked every chip, every connection, every word in the appalling Torch installation instructions, and moved the ROMs around in every conceivable combination. I believe that the problem was due to an interaction between the Watford DFS and the Torch MCP - but disabling the DFS (as per the suggestions on p.171 of April's Acorn User) did nothing. Eventually, I stumbled on pressing "B" and "Break" simultaneously - eureka - the machine returns to BBC BASIC mode, but with MCP! Pressing "Break" again then eliminates MCP and enables the DFS - thus in 100% standard BBC BASIC operation. CTRL-Break will then return the machine to Torch-MCP operation, in which it performs as it should! The alternative to all this juggling is to insert a disc - any disc, even a blank unformatted one - in drive 1 before even switching the machine on - then it powers up normally as a Torch-MCP machine. Typing "BASIC" (as per the Torch manual) does not return to ordinary BBC BASIC - it produces Torch BASIC.

I have no idea if any of the above applies to the typical BBC/Torch combination, but if anyone else is struggling with a Torch/Watford DFS combination, this should be the answer. (Watford advertise the DFS as being Torch compatible, and when I wrote to tell them it wasn't and asking what to do about it, they, too, failed to reply!

One further question - February Acorn User says Torch are Anglicising the Perfect Software to go with the Anglicised (??) manuals - as I received the US version of the software, I wonder if there is any word from Torch on whether they will exchange the old discs for the new version discs? Oh - finally - is there any way of using the Z80's extra 64k of RAM in BBC BASIC, or is it strictly for MCP use only?

TONY GLASER (WEST INDIES)

In principle, there should be no problems with any interaction between the DFS used and the Torch. The only problems likely to occur are clashes of instructions when two ROMs have operating system instructions with the same name. This, of course, only applies to single density filing systems. The other possibility is that the large amount of memory used by the Torch filing system might not leave sufficient memory for other BBC ROMs or vice versa. The

precise position of the ROMs used is also significant and other readers might find that the same ROMs located differently might cause slightly different results but a little experimentation should sort things out. The only remarkable result is producing "Torch BASIC". I am mystified! What is it? I understand from Torch that when the Anglicised version of the Perfect Software becomes available, it will be possible to obtain an update. Finally, there is no simple way of using the 64k of Torch memory from BBC mode. It is possible to access individual Torch memory locations via the tube but this would only be done if the programme was written specially and would be rather clumsy.

Any other readers with additional ROMs might care to let everyone else know which combinations give problems and also details of any which happily co-exist. Ed.

A COMMON STORY!

I started off with my Torch in disastrous fashion. I ordered the BBC complete with Disc interface, Torch pack and a Juki printer from a well known distributor. The BBC arrived with the Z80 card detached, a white, gooey substance smeared all over the chips, at least two chips missing, others in the wrong position and the keyboard almost adrift. I would imagine that it is not uncommon for the Z80 card to come adrift but the distributor did not like me complaining about the rest, although he somewhat ungraciously agreed to sort out the mess. Consequently, I am now without even distributor support.

In spite of these troubles, I am very happy with the equipment. Most of the troubles I have encountered since have either arisen out of my own inadequacies or the lack of suitable documentation. I think that probably an experienced programmer would disagree with me on the latter point, but I maintain that the style and approach are not suitable to the first time user.

I did not get the equipment operational until December and my time since then has been spent on what you might call exploring the software supplied. I am pleased with what I have found and there is no doubt that the programmes have tremendous possibilities. So far, the only snags are that the delete key does not work in text in the word processor and replicating in the spread sheet programme does not always operate.

T.G.H. HILLESLEY (ISLE OF MAN)

I have received several letters in a similar vein to the one above and have published Mr. Hillesley's as being fairly typical. The problem with the delete key may be solved by use of "PMCUSTOM" or failing that, there are instructions elsewhere in this issue on how to overcome this difficulty. I am not yet familiar with Perfect Calc so if anyone can supply an answer to the replicating problem, I will pass it on to Mr. Hillesley. Ed.

OVERHEATING

I am having some problems with overheating particularly noticeable after prolonged running times - and only cured by switching the disc pack off occasionally.

JACK STILES (SURBITON)

I understand that a small fan judiciously placed will solve this problem. Ed.

ABOVE THE LAWS OF OBSCURITY

The literature supplied contains a number of misprints (and downright lies) as well as being appallingly badly written. Even the dealers were not able to tell me how to get some of the ("gift") Perfect software to run. I had to resort to using the Pokedisc programme to find out how to run the stuff in the end - an amazingly complex method of getting into the programmes and one of the most hostile encounters I have had.

I write and edit law books; during the course of the last ten years I have been astounded by the lack of care on the part of legal authors and their obscurity of expression - but my contacts with the computer world have surpassed the frustrations and disappointments of legal editing in every way.

You may perhaps now understand why I am interested in being involved with a user group for the Torch. Having had a moderate measure of success using Applewriter II in connection with editing, the troubles which are occurring with the Torch are utterly infuriating and I should be pleased to share what little information I have with any other poor who has the same tribulations.

E.W. (Barrister) (WEST MALLING, KENT)

In order to obtain help information when using Perfect Writer, type "AX?" to remove the help display, type "AX" Ed.

LESS THAN PERFECT

I bought a BBC-B and a Torch Pack a few months ago because I wanted to do "professional" word processing and at the same time learn how to use a micro and to use it for mathematical and statistical work in particular. To that end, I started taking a local computer programming course.

I am frustrated out of my mind! The user guide with the Torch is unbelievably bad; I have already found several inconsistencies between the Perfect Writer book and what comes up on the screen and I've got little help from either my dealer or Torch. I still have not found out how to use the Torch Pack as a simple disc-drive with the BBC, working in BASIC, and wonder if I need to get hold of a special guidebook or even software.

So, yes, I'm a natural for your group. I also asked Torch about the availability of CPN software for statistical analysis (Analysis of variance, especially); all I got back was a long list of phone numbers. Then I've ordered discs from dealers advertising stuff for the BBC and been told that they don't supply software formatted for the Torch.

Best wishes to you. If you start a Newsletter or anything, I'll gladly pay for it. I had begun to wish I had paid out more and gone the whole way with an APRICOT or something like that. Perhaps your fine initiative will save me from the need for harikiri.

(By the way, my User Guide says that *CPN returns control from BASIC to CPN. It doesn't. The only way I have found to do that is Control-Break.) Also, when I go into BASIC it sometimes comes up on screen in mode 0 and sometimes in modes 1 or 5 - I think. Know any reason?

Sidney Holt (EAST SUSSEX)

I think that some explanations are due here! The Torch Discpack requires a

special disc filing system and it is possible that when your dealer installed the discpack, he did not include the standard Acorn DFS. Typing "B-Break" followed by "Break" should get you into Basic mode using the Acorn DFS. If it doesn't, it could be that the Acorn DFS is indeed missing - in which case you should contact your dealer. There is an Acorn manual for their DFS.

If any reader has located software for analysis or variance, please let me know and I'll pass on the information.

If you are buying software to run on the Beeb, you do NOT want it in Torch format. Order it on an eighty track disc and it will then work when you are in the BASIC mode. If you are not able to obtain it on an eighty track disc, there is a utility on the new Torch System disc, version 1.7, which will allow you to transfer data from a forty track disc to an eighty track disc.

Torch changed the name of the Beeb end of their operating system from CPN to MCP. MCP functions in exactly the same manner as CPN but allows the use of Torchnet. If typing *CPN doesn't get you into the Torch mode, try typing *MCP.

Part of the trouble that people experience is because there are four possible sockets in which the three essential ROMs; CPN or MCP, BASIC and the Acorn DFS may be fitted. The exact method of getting into and out of CPN and BASIC does depend on the way these chips are organised.

It seems from your letter that you have CPN in the Torch recommended location and hence "Control - Break" operates correctly. This is probably the quickest way to return to CPN from BASIC and will cause no problems.

I haven't come across anyone else who gets into BASIC in varying screen modes. I have raised this problem with Torch and they seem mystified too - so if anyone can shed any light, please write to me. Ed.

MISSING PERFECT

I read with interest your letter in the January "Acorn User" concerning the formation of a Torch User Group. From my own experience, I can say that Torch is not as responsive as might be wished to user's inquiries, though in my case it appears that an honest mistake was made (Torch's response to my letter was sent to the United States, they say.)

At any rate, I would like to learn more of your proposal, particularly as regards modestly priced software. I have yet to recover from learning, a few weeks after buying my Disc Pack, that Torch had decided to bundle software in future sales. And I was not very impressed to learn that those of us who had bought too soon could obtain this software for a mere £300.

Turning from highway robbery to a more pleasant subject, I would like to pass along to you that I have found a real bargain in software: the FORTH package produced by AIM Research of Cambridge. As you may already know, this package is tailored for the BBC/Torch and allows full use of all the outstanding qualities of both machines. And it's remarkably low priced into the bargain. See the February issue of "Soft" for more detail, but note that the BBC/Torch version is £24.15(!) At least it was when I bought mine in August.

J.E. MCINNIS JR. (N. YORKS.)

The Perfect Software is no longer available at the special price of £300. Fx FORTH sounds like a very good buy - perhaps we could have an article on it, Mr.

McInnis: There are details in this issue of Public domain discs at £12.50 each - at least it's a start on low cost software. Ed.

DOUBLE DENSITY

I am pretty sure that we have some powerful hardware, if only the mysteries of it and the accompanying software can be solved. I have the small blue ZDP User Guide and the larger blue Torch Programmers' Guide (preliminary issue.) These are pretty poorly organised and uninstrusive.

I have the version .71 operating system. I believe the current version is .72. Do you know what are the advantages, can the chip be exchanged, and if so, where and for how much?

Perfect software may be potentially excellent, although it is a great pity that the excellent BBC function and cursor key facilities are not used instead of the present obscure key combinations. The absence of any instructions for extracting the FW lessons and running them is a major blunder. I am having problems with merging them with the programme and in fact have not got beyond page 1 of lesson 1 because the discs try to swap and the screen finally locks solid.

I find there is a bug which makes Delete act on the character above it, rather than the one before. However, Control-H will act in the proper Delete fashion.

All in all, I am very glad that I have Wordwise to tide me over until I have mastered FW, although I now find unexpected corruptions of Wordwise text which I didn't have before I installed the Torch.

I am using the Acorn DFS as a temporary measure until I get the Pace Ancom chip. However, if there is a compatible double-density disc controller system (and the Kenda system reviewed in the current Beebug issue looks as though it could be) I should like to have it.

JACK EVANS (BRISTOL)

There are, as far as I know, no additional features in the updated operating system but the latest operating system comes with MCP which allows Torchnet to be used. This is the version of Econet which enables you to talk Torch to Torch instead of Beeb to Beeb.

Torch will supply updated ROMs but you must obtain CPN and CCCP because when you update one, you must also update the other. Torch say that they "would not normally update end users automatically unless they were experiencing a problem which could only be cured through an updated ROM." The cost of CPN version 0.72 is £40 as is CCCP version 0.91. This means a total cost of £80 plus VAT.

In order to use the lessons, they must be copied onto a separate disc from the programmes. This becomes the work disc and of course is used in drive B**. Full details are in the article on using Perfect Writer elsewhere in this issue.

The Delete key problem may be solved by customising Perfect Writer, see my reply to the letter entitled "A Common Story".

There is not at present a double density disc controller which is compatible with the Torch.

When you have installed the Pace Acorn DFS, I will pass on your experiences via Sidelight if you send me details. Ed.

BACK TO BASIC

I have recently bought a Torch Disc Pack and have had some problems with it. I have tried to contact TDP owners through Micronet, but haven't had much success to date - at least in finding someone who can help. I was therefore very interested to read your letter in the November Acorn User.

I received the Perfect Software packages with my TDP and so far have not used them to any great extent but have experienced no problems. My difficulties occur when I try to run some BASIC programmes which require to be located lower down than page \$1900. First of all I found that if one went into BASIC from CP/M with a *B, (or BASIC) page was located at \$1F00 so had to be reset. Having done this, loaded my BASIC programme and then used a M/C programme to shift it down to \$E00, where it had to be run from, it just wouldn't work. However, if I did a BREAK first while in BASIC and then loaded it and shifted it down, everything was OK. I thought I had solved the problem, but I have another similar programme which loads at \$1100, but here this just doesn't work. Both of these programmes have MUDE changes in them and I wonder if this has something to do with it as I get a BAD MUDE in the second case. I've tried everything to ensure that all the BASIC pointers are reset after the page change, but to no avail. Have you come across this problem by any chance? - As you say, it's no use writing to Torch, they don't reply and my dealer is no help.

I am intending to buy a CP/M stock control package - not yet decided which one - so would be very interested to hear of problems you've encountered with incompatibility between CP/M and CPN.

E.S. ROBERTSON (EDINBURGH)

To return to Basic from CPN, type "B-Break Break" This will set the system up as a Beeb with discs.

Strictly speaking, in order to load a programme below \$1900, you should load it at \$1900 or above and then shift it down. It is, however, possible to load programmes directly to addresses as low as \$1200 because the space between \$1900 and \$1200 is for buffers which are not normally used.

Your programme which must be loaded at \$1100 will therefore have to be loaded to higher memory and then shifted down.

Assuming that you are in mode 7 when you load your programmes, you will get the "BAD MUDE" because there is insufficient free memory above "Page" once the programme is loaded for the required mode.

Any reader with comments on stock control programmes may send them to me and I will forward them.

The reason for these problems is that CPN uses Beeb memory "B-Break" restores the system to a standard Beeb and the second "Break" starts the DFS. In order to get to the same conditions as from switching on, type "CTRL Break". Ed.

SIDEWAYS ROM EXTENSION BOARDS

I have considered adding more ROMs to my BBC'B' which has Torch Z80 and WORDWISE.

My BBC dealer suggested an external ROM Extension Board placed in a separate box and connected by Ribbon cables, there being no space in which to mount the first few rival versions of "plug-in" REBs.

Recently GDC (Cambridge) Ltd. introduced a REB to be mounted inside the BBC's lid (where the Z80 card is) their model has two wide ribbon cables and a narrower one. This maker has now advised having the torch board in a separate case outside the BBC and offers to supply at £15.00 (+VAT & P&P) a case and cable.

I should like to know whether any DISC PACK user has successfully solved this problem and by what means and with which REB.

A. MAPLETOFT (SURREY)

I do know of someone who has successfully included a sideways expansion board into a Beeb with the Torch Disc Pack. The ROM expansion board used is, I understand, the one from ALPL. There seems to be no mechanical problem in mounting the two boards in the case. I have my doubts, however, as to the wisdom of this arrangement due to possible overheating. A small fan might solve any overheating but this does not seem ideal.

I would not recommend extending the lead to the Torch board. I have asked Torch about the maximum cable which they recommend. They do know that greater lengths are used but do not, however, recommend more than 8" or 9". If you are able to obtain a suitable ventilated case and secure it to the underneath of the Beeb, it will be possible to relocate the Torch card and reroute its cable. This should allow the use of any ROM card without overheating being a problem.

Please let us all know what course you take and the results you achieve. Ed.

CUSTOMING PERFECT WRITER

As you will see from the accompanying form, I have used Perfect Writer a fair amount. The only problem I have found with it so far has been that the "Centre" command has to be written in the American way as CENTER. I understand that Perfect Filer presents greater problems, but as yet I have not been home enough to make use of this. I spend a lot of time abroad and my main use of the computer, apart from the enjoyment of the study of its structure etc. is for word processing lectures and manuscripts.

On a separate sheet, I enclose a copy of the function key programme I mentioned to you. I have changed it a little from the one contributed to PERSONAL COMPUTER NEWS by a G.F.Sargent of Loughborough, Leics. (He's obviously a Torch Disc Pack user and you may be able to get him to join us at some time or other! His full address was not given.) I added the *FX5,1 to it because I have a parallel printer and torch defaults to the serial port. Also, I called it BEGIN.SUB so that I can call it up by just pressing function key 9 on switch-on.

In the PERSONAL COMPUTER NEWS of March 31, they printed a strip of key functions to be inserted under the plastic strip. But they are much too detailed for regular use, so I have substituted them with the following: Word

F, Word B, Sent B, Sent F, Para B, Para F, Begin, End, DEL Word F, DEL Word B.
I have added a note to "Init. with 49". All this makes it much easier than
having to remember all the command codes in the manual!

DAVID JAMES-MORSE (CARDIFF)

BEGIN. SUB

(For setting up KEYS1-9 and 11-15 for PERFECT WRITER. Slightly modified from
Personal Computer News, 31/3/84 from G.F. Sargent, Loughborough.)

| Programme | Comments |
|------------|---------------------------------------------------------------------------------------------------------------|
| *FX5,1 | ;Chooses parallel printer |
| *FX3,6 | ;No output to screen. |
| *FX4,2 | ;Enables Keys 11-15 to be programmed. |
| KEY0:IF | ;Move one word forward. |
| KEY1:LB | ;Move one word back. |
| KEY2:IA | ;Move one sentence back. |
| KEY3:LE | ;Move one sentence forward. |
| KEY4:IP | ;Move one paragraph back. |
| KEY5:IN | ;Move one paragraph forward. |
| KEY6:IK | ;Move to beginning of document. |
| KEY7:ED | ;Move to end of document. |
| KEY8:LD | ;Delete word forward. |
| KEY9:LB:ID | ;Delete word back. |
| KEY11:B:ID | ;COPY Key programmed to delete one character back. (Delete key deletes one character forward with Perfect) |
| KEY12:B | ; |
| KEY13:F | ; Cursor keys move one character or |
| KEY14:N | ; line in direction of arrows. |
| KEY15:P | ; |
| *FX3 | ;Countermands *FX3,6 above. |

Mr. Sargent is indeed a member and has contributed two articles to this issue!
Ed.

RESTARTING A CRASHED PROGRAMME

To restart a crashed programme, create a dummy file called RESTART.COM. This
is done by typing:-

QA>SAVE 0 RESTART.COM

When using a programme which crashes eg. because a disc access fails, it may be
restarted by typing:-

QA>RESTART

The file RESTART.COM can be created when required but it's best if it is on the
disc for when it is required.

VISIT REPORT

At the time of my visit described below, Torch was owned by the triumvirate of: Newmarket Venture Capital, the Welsh Development Agency and Bell Nominees. Last summer, in search of additional capital, an agreement was announced which would have meant GEC injecting £3.25 million. In the event, the deal with GEC fell through and the shareholders came up with an extra £1 million. It has now been announced that an agreement has been reached under which Acorn will buy out Torch for, it is believed, about £5 million. It is said that this will not take effect for "some months". It is believed that Torch's Unix expertise was a big attraction to Acorn and that Torch will continue to handle business systems. What effect this, combined with Acorn's announcement of their 280 second processor, will have on Torch as a company and of course us as users is, at present, a moot point. Whatever the result of the takeover, it is likely to be some time before we, as current users, feel any effects.

At last, after two postponements, I have finally met Colin Yeoman, the Support Manager at Torch. I spent an interesting and informative afternoon - meeting and chatting to the people who brought you the Torch Disc Pack. I was interested to learn that Torch started life as a software house. They were originally thirty per cent owned by Acorn and had been set up to write software for the Acorn business computer. When the hardware did not materialise, they decided to design some of their own. Acorn no longer have a thirty per cent shareholding and Torch are expanding very much faster than they anticipated to the point where they are rapidly outgrowing Abberley House. An indication of how well they are doing must be the boxes of Torch equipment stacked everywhere ready for dispatch.

I pointed out to Colin that the chief criticism from users who had been in contact with me was the lack of after sales support. Being the Support Manager, this did seem to hurt Colin to the quick. His response was that the support department had only recently been formed and served two main functions: sales support and customer support. I suspect that the sales support, as in most companies, comes first. I have been assured but am not yet convinced that customer support is improving. To give Torch due credit, I have received some favourable comments. Torch see their dealer network as the first line of support with Torch providing their dealers with the know-how. They have agreed to provide us with a good level of technical back-up but emphasised that they want us to remain autonomous. I readily agreed with this. If you have a problem, your first port of call must be your dealer. If you do not obtain satisfaction, please write to SIDELIGHT. We will handle technical queries relating to hardware or software but please try your dealer first if at all possible - our resources are limited. The support department at Torch consists of Colin, his secretary and two technical persons who "spend all day answering the phone." Colin's staff work in the "Hive" where, I was told, it is pretty hectic. Unfortunately, my visit to the Hive seemed to coincide with a tea break. Colin personally answers all letters sent to him - currently about one hundred a week. A four week backlog previous to the department's formation is, I am told, being reduced.

One rather contentious point is the question of the availability of Perfect software to people who purchased their TDP before it was included in the price. It seems that the agreement between Torch and the Perfect Software Inc. only covers the distribution of software "bundled" with hardware. There was a verbal agreement under which Torch were offering an upgrade to Perfect software for £300 but it seems that some dealers abused this agreement. Perfect Software Inc. are now establishing themselves in this country and will not allow Torch to distribute their software without hardware. It seems the

Perfect Software Inc. considers this to be unfair competition against their own distributors especially at a mere £300. The only advice Torch can give is that if you want Perfect software, you should obtain it from a Perfect dealer. Torch themselves do not seem happy with the situation but feel their hands are tied. My advice would be to carefully examine your software requirements. If, on balance, you decide that Perfect software is for you, look closely at a Torch price list. You will find that you can now buy a Z80 CPN board (ZEP 100) for £375 complete with the Perfect package. The problem then is - can you convert the spare Z80 card back to cash? At present, the answer appears to be no, but please let me know if you have any ideas or if you would like to purchase some Z80 cards with no software!

I have always been rather concerned because I had the impression that Torch were really in business to sell C-series machines and that the TDP was little more than a sideline. This fear has been totally dispelled. I am told that there are around eight thousand Torch users - the majority are TDPs. Torch must view this as an important product area and say they will fully support it.

Having received numerous letters about the quality of the Perfect software, this was an aspect discussed at some length. The problems raised mostly relate to printing and differences between the manual and what actually happens. Most people who have contacted me have an FX80 printer - Colin assured me that if you initialise the software correctly, it will print correctly. The only feature not supported is proportional spacing on the FX80. There is an article elsewhere in this issue on how to configure Perfect software for the FX80 and if you follow this procedure, your printing troubles should be over. If you have some other printer and have successfully configured the software, perhaps you would be kind enough to send me details. If you have not yet successfully configured the software, the article on the FX80 should give you a guide. Let me know if you are stuck (with an SAE and membership No.) and I will forward any details I have received relevant to your printer. Please, however, be patient - I cannot send out details for printer configuration until I receive them from someone else and do not forget to let me know what make and model printer you have.

Torch did admit that there are differences between the software and the manuals. As you have probably realised, these occur because the manuals have been Anglicised by the Perfect Software Inc. but the software has not. An update of the software is in hand in the States and will be distributed through the Torch dealer network to all Perfect users when it is available. In the meantime, however long that may be, SIDELIGHT will act as a clearing house. So let me know of the differences and how you resolved them. It seems from my discussions that the software is fundamentally sound. Torch did state that their dealers are there to provide back-up for failures and bugs rather than to supply basic training.

As far as hardware problems are concerned - there seem to be very few with the Disc Pack. The best way to obtain service for your hardware is to return it to your dealer. Always return the Beeb and Torch parts. Faults are not always where you might think so even if your Beeb worked perfectly before you added the Disc Pack, do not assume that because the two do not work together, it is necessarily the Disc Pack at fault. At the risk of repetition, always return the complete system. Your dealer should identify the faulty unit and return it to Torch if appropriate. Torch will only cure faults in their own equipment. They will not cure faults in the Beeb. The standard charge for service is £25 plus parts. This standard charge is made if no fault is found in the Torch part or if it takes hours to rectify a particularly nasty fault in the Torch. This is why it is always wise to send the hardware to your dealer! Torch do

not repair disc drives but will supply an exchange unit for £80. While talking to the Service Manager, I asked about recommended media. He suggested that only "high quality discs with hub rings" should be used. During my tour, I spotted Bysan and Scotch discs and Torch recommend the Scotch as being the lowest cost reliable media.

I enquired about the use of the Beeb's own power supply. If your Beeb printed circuit board is of issue 4 or later, there is no problem. There is also no advantage in powering the Beeb from its own power supply unless you want to run the Beeb independently from the TDP. DO NOT, UNDER ANY CIRCUMSTANCES, FIT A MAINS PLUG TO THE WHITE CABLE WHICH CONNECTS THE BBC COMPUTER TO THE TORCH DISC PACK. The connections between the Beeb and the TDP are 5 volts only. The mains is 240 volts. Connecting mains to the Beeb WILL destroy the Beeb and the TDP, if connected, and may cause electrocution! If you want to use the Beeb's internal power supply, go to an authorised dealer for advice.

A number of people have raised the question of Torch manuals with me. Full details of what is available will be found elsewhere in this issue.

I expressed curiosity at why Torch had seen fit to develop a CP/M look-alike instead of using CP/M. The rationale behind the choice should have been obvious to me. CP/M consists of three major components: BIOS, BDOS and CCP. The BIOS is relatively small and is the part which is tailored to suit each different computer. The BDOS is fairly substantial but generally common to all CPM computers. Most of the functions, however, performed by the BDOS on a conventional CPM machine are performed more efficiently by the Beeb processor and would thus have to be rewritten anyway. Only the CCP remains and this is rather primitive and has to be helped along by additional utilities.

To put it in a nutshell, due to the structure of the Torch hardware, two parts out of three of CP/M would require rewriting, and the third was considered inadequate. The Torch thus provides an optimum solution to several problems. An added advantage is that CPN resides in ROM not on disc and this means there is more memory available to run programmes in, more disc space is available for data and programme storage and the system does perform certain functions faster. It would seem that in the TDP, we have a very superior machine! One disadvantage is that because the operating system is ROM based, it can't easily be tuned but as it is superior to CPM, this should be less necessary.

We spent some time discussing the Torch range of add ons for the Beeb. As an indication of their commitment to this part of their business, Torch have a name for this range of products - Unicorn. You might ask, why Unicorn? I'm afraid I did not and so am unable to tell you. I can only suggest that the "corn" bit is common to Acorn and Unicorn! The range consists of five products:

- (a) 180 Disc Pack (ZDP 240)
- (b) 180 Card (ZEP 100)
- (c) Floppy Disc Pack (FDP 240)
- (d) Hard Disc Pack (HDP 240)
- (e) 68000 Hard Disc Pack (HDP 68K)

The 180 Disc Pack will be familiar to most readers. This consists of a box with two 5.25" Mitsubishi drives of 400K bytes capacity each and a power supply to run the whole system. Additionally, there is a 180 processor card with 64K of RAM and "CCCP" in ROM. There is also an "MCP" ROM to insert in a Beeb sideways ROM socket. In older systems, the Beeb ROM is called CPN but the only difference is that MCP supports Torchnet. The "MCP" ROM and the "CCCP" ROM together provide the CPN operating system. A utilities disc and the Perfect

software is included with all the packages except the Floppy Disc Pack and the Hard Disc Pack. The 280 Card is for people who already have twin eighty track disc drives. It contains everything that the 280 Disc Pack contains without the disc drives or power supply. The floppy disc pack is the disc drives and power supply only. There is really nothing new in any of these three packages - it is the ability to buy a part of the 280 Disc Pack which is new. The last two items on the list will be new to most readers. Again, they are not new products. They were announced for the C-series computers some time ago but have only just been made available to Beeb owners who wish to upgrade. The Hard Disc Pack can be considered analogous to the Floppy Disc Pack but it contains only one floppy disc drive. The second disc drive is a 20M byte fixed hard disc, commonly called a Winchester drive. There will be a short "personal opinion" in the next issue on Winchester drives but if any reader is able to supply a review, we would be pleased to publish it. Finally, there is the 68000 Disc Pack. This consists of a Hard Disc Pack plus a 68000/280 card. This single card includes the facilities of the standard 280 card: 64K RAM, "CCCF" ROM, and a 2808 microprocessor (this is faster than the 280A fitted in the 280 card.) Additionally, there is a 68000 16 bit processor with 256K of RAM. This allows Unix software to be run. Unix is an operating system as are CPM and CPN but Unix is far superior in many ways. Torch have tied up with Pipeline to provide the Unix software. Unix will not run on the 280 - it runs on the 68000 microprocessor. I understand that there is, in the offing, a package to allow 8086 software to be run on a 68000. If it ever comes to fruition, this will make a much wider range of software available to run on the 68000 as there is already a good deal more 8086 compatible software than 68000 software. As the 68000 is a very powerful processor, it will allow software to run faster. This is an advantage for certain applications but for many users the availability of Unix may be more significant than the extra raw processing speed.

Now that I have given you the good news about the new hardware, I'm afraid I must give you the prices. The Hard Disc Pack which includes the single floppy drive is priced at £1995. This is without the 280 board. If you do not already have the 280 card, you can obtain the Hard Disc Pack plus 280 card for £2275. The Hard Disc Pack and 68000 cost £2495 without Unix. If you purchase the 68000 Hard Disc Pack and Unix at the same time, the total cost is £2895. This is much cheaper than buying Unix separately, that way, it would cost £800. Consider these prices to be a guide only but they are correct at the time of writing. You will, of course, no longer require your Floppy Disc Pack and so should be able to trade it in when upgrading. These are expensive upgrades but if you require the storage capacity that they provide, it should not be difficult to justify the expense: at about four times the price of a dual disc, you receive 25 times the storage capacity, sort of - see the article in our next issue on hard discs!

An add on which I and I am sure many others would find attractive would be a double density disc controller compatible with the Disc Pack. I understand that currently, Torch have no plans to introduce one.

I raised several other points which Colin noted. One of these was a suggestion that Torch supply their keyboard as an option. This will solve the problems of "missing keys" and being of a higher quality than the standard Acorn keyboard, should make those hours spent typing less of a strain. We will have to wait and see if it becomes available and whether it is affordable.

I have tried to be as objective as possible and hope that this article reflects my visit accurately. I am sure there are points on which many will wish to comment - so please write to me - don't just complain to your nearest and

Continued on page 21

USING PERFECT WRITER.

Introduction

In this article I am going to try and pass on some of the knowledge that I have gained in the course of many hours spent trying to make *Perfect Writer* into a system that I feel reasonably happy to use. I don't make any claim to be the world's most expert user but I have now reached the point where I use *Perfect Writer* for most of my correspondence in preference to *View*. Although *View* is a fairly good word processor its formatting facilities are limited. Even more of an inconvenience is the limitation to 31 files on a disc - this may be OK if you are writing a book, but it doesn't take much correspondence to fill up the catalogue.

I use *Perfect Writer* 1.20 on a BBC computer with a Torch disc pack and an Epson Fx-80 printer. Everything that follows is directed at this set-up. I have not used other printers with *Perfect Writer* but I would expect my experience with the Epson to give a few useful pointers.

Starting Out

- Gather together: the *Perfect Writer* distribution disc; a Torch System disc; a blank disc; the Torch System Guide; and the *Perfect Writer* manual.
- Take any discs out of the drives, reset the system (control-break or power off) and, if necessary, enter *CPN (my system defaults to BASIC). Check the write-protect notch on the system discs is covered (better safe than sorry).
- Duplicate (DUP) the *Perfect Writer* distribution disc onto the blank disc to make a working copy. Put the distribution disc away safely.
- Put the Torch System disc into drive B and "COPY B:EXEC.COM TO A:". Put the System disc away.
- Create a submit file by keying in the following (leave out the remarks):

```
INPUT BEGIN.SUB
*FX4,2      ;make cursor control keys programmable
*FX5,1      ;select parallel printer (default is no printer)
*FX6,0      ;allow all characters except ASCII 0 to be sent
*KEY11:H    ;programme cursor keys to give Perfect Writer
*KEY12:B    ; commands
*KEY13:F    ;
*KEY14:N    ;
*KEY15:P    ;programme COPY key (see note below)
*IV 0,0     ;
```



```

MODE 0      ;
F 6         ;cyan foreground
B 4         ;blue background
VDU 12      ;clear screen
EXEC !X:MENU!M ;call menu programme
^Z         ;end input (NB ^Z = Control Z)

```

- Key <f9>: Torch sets this to a default value of 'BEGIN' and it will submit the BEGIN.SUB file you have just created. This is the Torch equivalent of !BOOI in the Acorn operating system.
- Lo and behold, with a great whirring and flashing the *Perfect Writer* menu screen should appear.

Note: the DELETE key now deletes the character immediately above the cursor and the COPY key deletes the character preceding the cursor. This is not a particularly comfortable arrangement, but as Torch have not distributed PWCUNFIG, the terminal configuration programme, it is the best that we can do.

The First File

- Select option E from the menu. Don't hit RETURN. You will be asked for a file name. Enter 'SCRATCH.'; the '.' at the end forces a null suffix on the file name. This saves some typing later because the format program looks for an '.MSS' suffix if you don't specify one and the null suffix is the shortest to specify.
- As SCRATCH. doesn't exist you should get a blank screen (apart from the caption lines at the bottom) and a 'NEW FILE' message.
- Load in some text by inserting the BEGIN.SUB file you created earlier. To do this type '^XI' (NB not ^X^I) and reply 'BEGIN.SUB' to the query.
- Change it if you like; try out the cursor keys; check out the instructions in Chapters IV and V of the *Perfect Writer* manual.
- Save the file by typing '^XS' (NB not ^X^S). You should get a 'File Written' message.
- Return to the menu by typing '^XC'.
- Format the file by taking option F and 'SCRATCH.'; take option G from the Format menu. You should get a series of messages and then return to the main menu.
- Print the file by taking P and 'SCRATCH' (no full stop); take option G from the Print menu. Answer 'Y' when asked for confirmation. The file should print and then you should return to the main menu. If nothing prints then check that your printer is on and that the *FXS and *FXb calls in BEGIN.SUB are appropriate for your setup. Then try again.
- If you are successful in getting some printout then don't be too surprised if the format isn't quite what you expected; more of that later. For the

meantime check that the content is correct; then reformat the file but this time take options V and then G from the Format menu. Print the file again; this time the layout should be close to what you saw on the screen.

TYPES OF WORD-PROCESSOR

There are two kinds of word-processor which differ in the way that text is formatted. The most common kind is usually called 'What You See is What You Get' or 'WYSIWYG' for short. In these almost all the text formatting is carried out on the VDU and the listing will be close to identical. *WordStar* is the classic example of WYSIWYG; Headers and Footers are about the only thing not shown on the screen. *View* is another WYSIWYG processor.

Perfect Writer is an example of the second kind of processor. What you see on the screen is a working file of text and formatting instructions, a formatting program is used to translate these into a printable file.

There are, of course, pros and cons to both kinds of system. The main advantages of the Formatted processor is that it is much easier to change your mind about the layout of your text. For example, the last section had itemized paragraphs - inset with a leading dash; this section has ordinary paragraphs. I can change these formats by altering one word and re-formatting. In *WordStar* I would have to readjust each paragraph separately.

The main disadvantage is that it takes quite a long time before you can be even reasonably sure what the printed file will look like. Even now I find that I get rather more surprises than I really care for - though they are getting fewer as time goes on. (The right answer is probably a bit of each, but until we can run *Microsoft Word* on a Torch we will have to make do with what we have.

LAYOUT

There are four different elements of *Perfect Writer* which affect the print layout:

1. the text that you enter;
2. the format program, *Perfect Format*, which acts on instructions within the text;
3. the default STYLE instructions (together with any STYLE instructions in the text); and
4. the DEVICE which is specified as a default, in the text, or when the format program is called.

Each of these merits an article of its own, for now we will have to make do with a brief paragraph. The only real answer is long and laborious

exploration; in the early stages only make one new change at a time, if too much is changed it can be tricky to work out what is happening.

text The way that you lay out text on the screen is pretty well irrelevant to the way it will print out at the end of the day. The exceptions to this are blank lines between paragraphs, which are critical; and text in certain formats, notably @VERBATIM, @CENTER, the @FLUSHes, @ADDRESS
1
and @CLOSING .

format You cannot make any sensible use of *Perfect Writer* without becoming familiar with the '@format' commands. The ability to change the layout of text by changing these commands is the key to *Perfect Writer*. I have quite deliberately used a range of them in this article - this section uses @DESCRIPTION, the italics use @i, and so on. As an exercise see if you can work out which formats were used - there is nothing unorthodox.

style The style commands are concerned with the layout on the page. You can change margins, line spacing, paragraph spacing, indenting and so on. Default STYLE commands are set up as a part of PFCONFIG, the configuration programme. I have to say that I have not always got the results that I expected and have a mental note to delve further in this
2

area. There is only one set of default commands so anything else has to be set up in the text file; note that @STYLE commands can only appear at the beginning of a file immediately after an @DEVICE command if there is one, this is so that the formatter can count the lines on a page without running into too many complexities.

device The device configuration is mainly concerned with generating the correct printer codes. A number of devices can be set up through the PFCONFIG program - though the process is laborious. Although the manual talks about having files for a range of printers, it is much more probable that you will want to set up files for different kinds of output; I have devices defined for notepaper (9"x7"), A4 and listing paper as well as Console and File. There is some overlap between the device and style parameters - again this merits more investigation. With my FX-BV printer I have had no real problems.

Note: as there is to be a separate article on the subject I have not gone into detail on printer configuration.

1. The @FLUSHes are, of course, RIGHT & LEFT; @ADDRESS and @CLOSING are the same and have the effect of 'flushcenter'.

2. If the reviews are to be believed more recent versions bundled with other computers have a range of style files.

But:

- ignore the Epson 'Special Printer Code', the system knows some odd codes that your printer won't recognize - it tries to use 'A' for line feeds;
- don't bother with trying to use proportional spacing, it is possible but the lack of a microspace means that the effect isn't worth the effort;
- do take the time to set up a 'Translation Table' to match up the keyboard with the printer characters.

THE END

I hope that this short article has gone a little way towards helping your understanding of *Perfect Writer* and will encourage you to spend some time exploring its facilities for yourself. In another existence I have used *WordStar* and dedicated Word Processing systems; *Perfect Writer* stands up well in comparison - my biggest complaint is the Torch and *Perfect Software* have made a pig's breakfast of the BBC terminal implementation but have not distributed the PWCONFIG programme necessary to do the job properly.

Don't be discouraged by the feelings of total despair you will encounter if this is the first or second time you have met up with a word processor. Pain is an integral part of the learning process - a day will come when the results are more or less what you expect and you don't always wipe out your files.

Bob Jones

VISIT REPORT Continued from page 16

dearest! Torch do seem responsive and I will pass on any suggestions to them.

Grahame Perchick

TORCH SYSTEM DISC VERSION 1.7

The latest Torch system disc is version 1.7 details in the next issue.

EPSON PRINTER FORMAT

The following format will get you started with an Epson printer. If it does not fit your requirements change only one item at the time to learn what effect each function has. Full details on using FPCUN16 to configure any printer will appear in our next issue.

Follow the steps in the Perfect Writer manual Appendix A pages 307 and 309 but select option 3 on page 309 specify Epson as the printer and answer the questions with the answers below. ED.

Printer Type Definition Menu

- 1 - List the currently defined printer types
- 2 - Define a new printer type
- 3 - Update existing printer definition
- 4 - Delete a printer definition
- 5 - Select the default printer type
- 6 - Return to main menu

Enter the number of your selection, followed by a CR --> 3

Name of printer to be edited: EPSON FX80

- 1 - Paper width: 21590 microns
- 2 - Paper height: 30480 microns
- 3 - Standard character width: 254 microns
- 4 - Height of a single-spaced line: 423 microns
- 5 - Smallest horizontal movement: 254 microns
- 6 - Smallest vertical movement: 423 microns
- 7 - Proportionally-spaced font/printwheel? No
- 9 - Generate online-readable output? No
- 10 - Initial paper offset: 0 microns
- 11 - Special printer code: 1
- 12 - Use Control-H for backspace? Yes
- 13 - Use Carriage Return (Control-M) for bare carriage return? Yes
- 14 - Use Form Feed (Control-L) for form feed? Yes
- 15 - Type of synchronization protocol: 1
- 16 - Translate characters on output? No
- 18 - Initialization string: ~~^Q^P~~ (Esc. @ Esc. P)
- 19 - Reset string:
- 20 - New line string: ^Q^J
- 21 - Boldface on string: ^IE
- 22 - Boldface off string: ^IF
- 23 - Italics on string: ^I4
- 24 - Italics off string: ^I5

CODE COMFORT FOR IMPERFECT WRITERS

I suppose that when you go and call your software "perfect", you deserve all you get, and certainly the Perfect Software supplied with the Torch and other systems falls short of perfection. There is, for instance, the curious discrepancy between the out-and-out American in which the program is written, and the half-English-half-American of the manual. This is fully reflected in the spelling checker's ignorance of English spelling, although, of course, it can be taught! More curious is the fact that Perfect Speller seems not to have been told about Perfect Writer, and cheerfully puts up formatting commands such as "pagefooting" as errors.

Plenty of room, then, for wits and buffs to make fun of its foibles. But it would be difficult for something that needs an inch thick manual, not to have a lot of potential hidden away somewhere. And that manual is not necessarily the easiest place to find it.

Most wordprocessors have basic similarities, but it is the way they are packaged which determines who loves them, or if they are loved at all. I was recently demonstrated a system that used the manufacturer's own typewriter as the input keyboard and the printer. Secretaries loved it! Yet the program it ran was nothing out of the ordinary. In contrast, the system I cut my teeth on was designed for use on our minicomputer, and was not a wordprocessor, as such, at all. It consisted of a choice of three editors and a single text formatter. Putting them together, of course, gave us what you call a word processor. We certainly used it as such (and still do), but any one of the editors alone was capable of writing text. Or programs, or data.

As far as I am aware, all wordprocessors are a package of editor and formatter. In Wordstar, you are presented with them together. In Perfect Writer you are not.

In this article I only intend to cover Perfect Writer's editor, which, as I have explained, will work alone, creating files that can be printed out using the CPN (MCP?) command PRINT <filename>.

All wordprocessors need to be able to enter editing commands as well as text, and in Perfect Writer as with Wordstar, control keys are used. In Wordstar, however, these are displayed on the screen as a menu, while the up/down/left/right cursor commands use a diamond shaped area of keyboard on the left. Perfect Writer, on the other hand, hides its codes in a thick manual, or uses ambiguously significant letters (is <CTRL>N next letter or next line?), and I suspect that memorising these codes is the first difficulty people have to confront.

The solution to this problem is not far away. It is the red function keys at the top of the keyboard, which can be programmed to issue the appropriate codes. These, together with the arrowed keys and COPY key give you fifteen codes. You may also include the BREAK key, but I prefer not to. When you add to this the fact that each key can operate alone, or shifted, or with the control key, or, indeed, shifted control, you have a facility to cope with sixty codes. Design a key definition strip to go under the clear plastic strip at the top of the keyboard, and you're in business.

To be fair, Torch have already done this. The result of their work is in a file called F60.S08, which you call by typing F60 before calling up Perfect Writer. F60, however, is a little curious, and seems to have been written to augment the lavish function keys on the C-series Torch. There is a separate F60

for Perfect Writer and Perfect Calc, and each takes advantage of the fact that, using *FX 225 to 228, followed by the code number of the first required character (as listed in the Perfect Writer manual, pages 352 to 361), results in the remaining function keys in the series following suit. For example *FX 225,18,0 would make Red f0 into <REVERSE SEARCH> (code 18); f1 would become the next code, <FORWARD SEARCH>, followed by <TRANSPOSE CHARACTERS> in f2. The call *FX 226,18,0 would do the same for <SHIFT>f0, f1 and f2, and *FX 227,18,0 for <CTRL>f0, f1, f2 etc.

What puzzled me for a while, was that the seed codes used by PGD were 128 and 160. Inspection of pages 355 and 356 would suggest that this should result in a lot of codes for <UNKNOWN COMMAND>. Not so. It would appear that these vast tracts of unknown commands have been replaced with more useful functions by somebody. Code 161 (<ESC>!) has now become the same as code 11 (<CTRL>K), which is <KILL LINE>. Someone obviously has access to the program PWBIND.COM discussed on page 345 of the manual, and I wish they would let me have it, too.

Torch don't seem to have made much of their wonderful resources, however. To start with, there are already codes in the function keys on power-up. These are things like <QUIT> and <BEGIN> on the unshifted keys, but the shifted keys hold useful Perfect Writer codes. What PGD does is to duplicate these same codes on the unshifted keys.

As well as seeding a series of codes, it is possible to place codes as strings, in each of the function keys. However, you are limited, it seems, to one series. You cannot have strings in both shifted and unshifted keys. Never mind. What I have done on my own system, is to place all the codes I commonly use on the unshifted keys, and use the two series starting at 128 and 160 on the shifted and control keys. This allows me to make COPY into a delete backward key (a much used function and a glaring omission on the original) to complement the DELETE as a delete forward. This also meant that I could keep unshifted keys for relative innocuous functions, like moving the cursor, while those keys I would really hate to type accidentally, like <EXIT> or <SAVE THIS FILE>, require two hands as shifted functions.

While I have clearly placed codes on control-function keys as well, I've left these off the heading strip, as too much information only confuses, and a (rewritten) help screen is easily available by typing shifted f1. Indeed, codes could be placed in shifted-control-function keys too, but that's probably going over the top a bit. But if that's what you want, why not try it.

Finally, let me bring you back to those strings which are in the function keys on power-up. Next to <BREAK>, the f9 key contains <BEGIN>. By pressing f9, a file called BEGIN.SUB is therefore called. Originally I had all my key redefinitions in a file called SETUP.SUB, which was called as a program in its own right. However, the need arose to try and create a "turnkey" system for a non-computer-literate colleague, so SETUP was changed to BEGIN. A few more twiddley bits were added, like the *FX 138s at the end of the routine, which insert the letters of MENU into the keyboard buffer, so that, now, the red keys can be defined and the user taken straight to the first menu just by pressing f9.

LISTING OF BEGIN.SUB

```
MODE 0
*FX3,6
*FX4,2
*FX 226,128,0
*FX 227,160,0
*KEY 0 :CF
*KEY 1 :EB
*KEY 4 :CF
*KEY 5 :DN
*KEY 2 :CA
*KEY 3 :LE
*KEY 6 :LC
*KEY 7 :D>
*KEY 8 :LD
*KEY 9 :LB:LD
*KEY 11 :B:LD
*KEY 12 :B
*KEY 13 :F
*KEY 14 :N
*KEY 15 :P
*FX 21,0
*FX 138,0,13
*FX 138,0,77
*FX 138,0,69
*FX 138,0,78
*FX 138,0,85
*FX 138,0,13
*FX3
;Special Keys Set-up
```

Goff Sargent

There is a key strip for Goffs function keys in the centre of this issue and a copy of his SUB file on the Sidelight library disc. Ed.

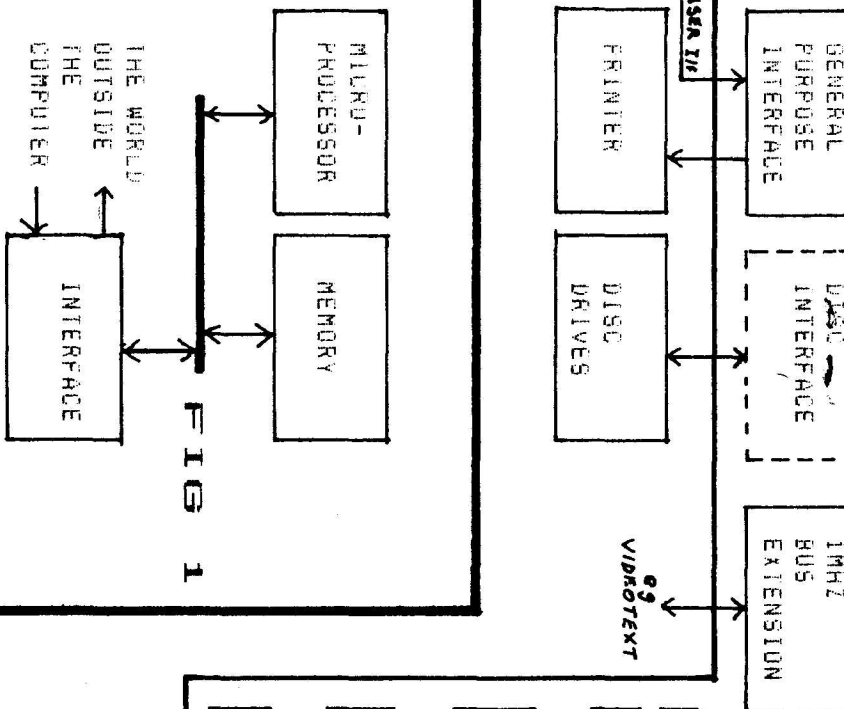


FIG 1

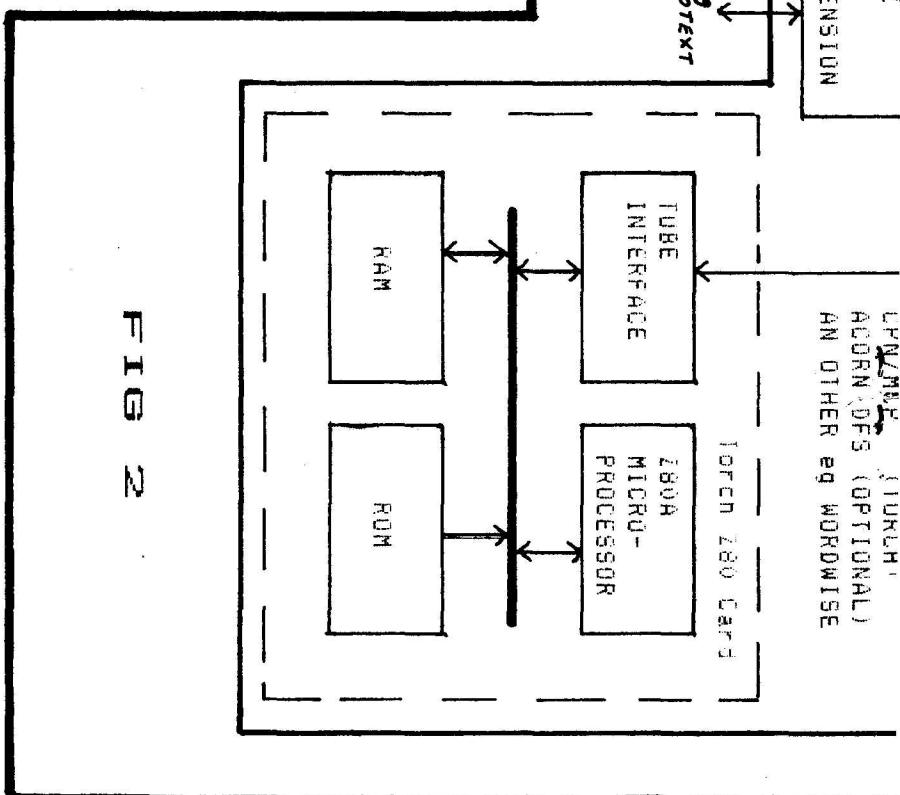
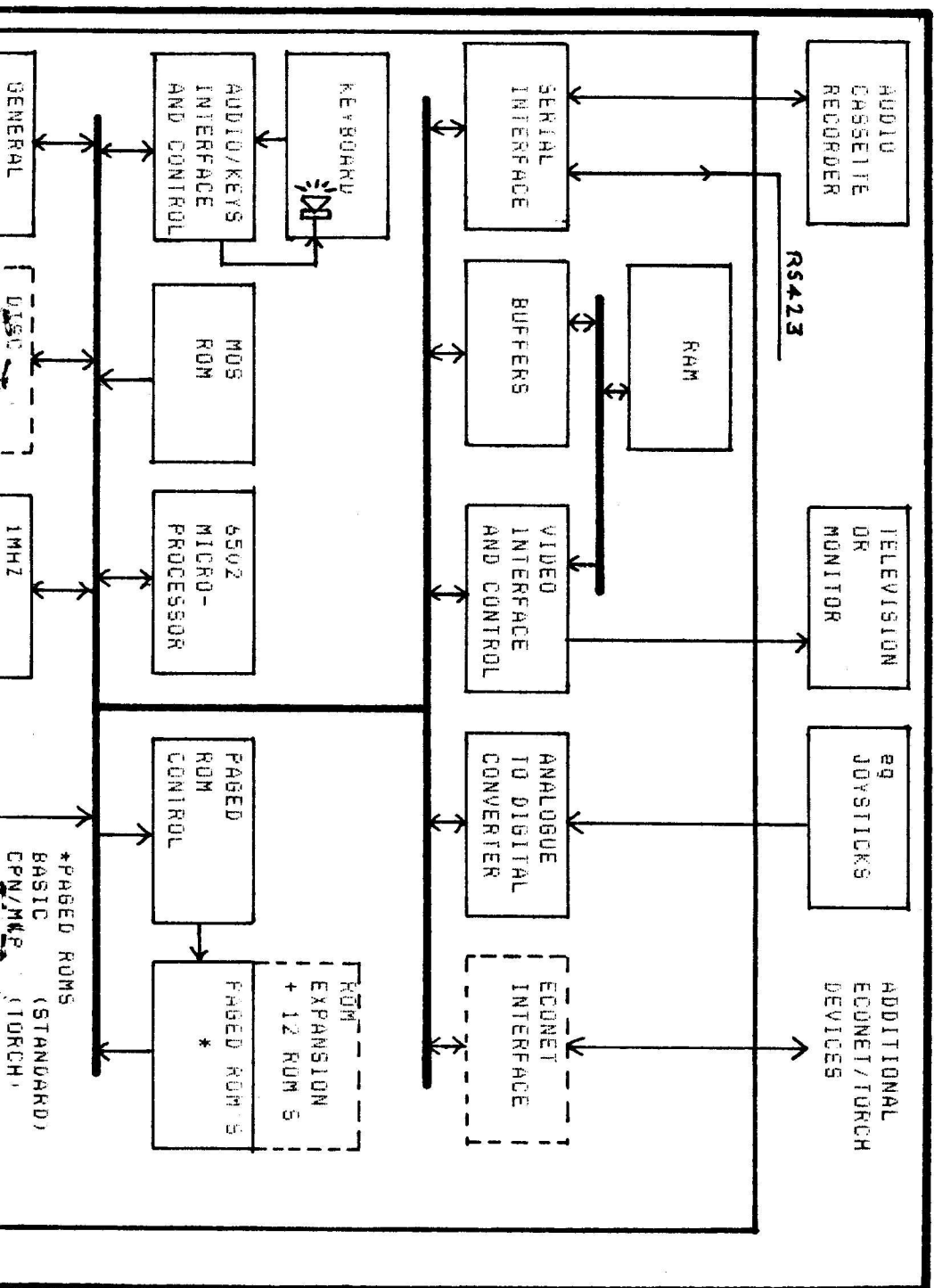


FIG 2

SETUP keys are as below for Perfect Software.

ARROWED KEYS move one character, DELETE deletes forward COPY deletes backward

| | | | | | | | | | | | | | | | | | | | |
|------|------|--------------|----------------|------------------|--------------|--------------|---------------|-----------------|-------------------|-----------------------------|------------------------------|---------------------------------|----------------------------------|----------------------------------|-----------------------------------|-----------------------------------------------|-----------------------------------------|---------------------------|----------------------------|
| 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | | |
| EXIT | HELP | SCROLL UP | SCROLL DOWN | CENTRE SCREEN | SAVE FILE | READ FILE | WRITE FILE | LIST BUFFERS | SWITCH BUFFERS | MOVE ONE WORD FORWARD | MOVE ONE WORD BACKWARD | MOVE ONE SENTENCE FORWARD | MOVE ONE SENTENCE BACKWARD | MOVE ONE PARAGRAPH FORWARD | MOVE ONE PARAGRAPH BACKWARD | MOVE ONE PARAGRAPH BEGINNING OF TEXT | MOVE ONE PARAGRAPH END OF TEXT | DELETE WORD FORWARD | DELETE WORD BACKWARD |



SIDELIGHT LIBRARY

Sidelight is not going into the distribution of software, but there is a vast quantity of public domain software available which we will supply to members. Most library volumes contain about 250k of programmes and documentation. The cost of each disc is £12.50 but if more than one disc is ordered at the same time, the second and subsequent discs cost £12.00. This is an all inclusive price for disc and p&p. Not all of the programmes available are suitable for use under CPN and many which will work with CPN may require tailoring to suit the Torch. Generally, there is no documentation available other than that on the disc. This is usually in a .DOC file. The size of the programmes vary from many diverse programmes on one disc to eight discs for one programme. The quality of the software and documentation varies similarly.

Included in the centre of this issue are directory listings for the discs which we can supply ex. stock. These listings are supplied in the centre to allow you to remove them easily and file them all together with the listings which will appear in future issues. There are hundreds of additional discs which we can obtain especially for you. The index, volume UK00 contains directory listings of all the discs available.

I had hoped to review the discs which we can supply ex. stock but unfortunately, the pressures of getting Sidelight out have not allowed me time to use any of the programmes. In future issues, I will rectify this when time allows. I must stress that I do not have the time to search for a particular programme to meet your requirements but if you enclose an SAE, I will give an opinion on whether or not a programme will work on a Torch. The only warranty with these discs is that your system can read them. There is no guarantee that they will work on a Torch without modifications.

We will only accept cash with order for library discs and delivery will be about fourteen to twenty eight days for discs which are ex. stock and up to double that time for discs which are ordered specially.

I shall try to answer straightforward queries on programmes which I have reviewed if the query is on disc, with a printed copy enclosed plus an SAE label to return the disc. See Editors Lines for details of writing to Sidelight.

In order to make this software most useful to the greatest number of members, I would ask anyone who succeeds or fails to use any of these programmes to write a short review.

The comments which follow are necessarily brief as already explained and are largely hearsay. I have only mentioned programmes which I think SHOULD run on the Torch but because I do not mention a programme, do not assume that it won't work. At £12.50 each, it's usually worth a try.

UK00 Catalogue

This disc, which will be updated periodically, contains a catalogue of all the available discs, currently over 200. The format is the same as the listings in the centre pages.

UK11-12 Stoic, Forth79, Extended Forth.

These two discs contain the Stoic interpreter. They should work on the Torch with no changes. Stoic is a threaded interpretive language and can be twenty times faster than BASIC. It is similar to Forth but comes with a good selection of extras such as the mathematical functions. Many people believe

this type of language to be easier to learn than BASIC. It is probably faster to code and certainly produces faster and smaller programmes than BASIC. Of all the public domain discs available, these two are probably the best documented and best value for money. I also understand that the programmes are well written and relatively bug free.

As an added bonus, UK12 also contains Forth/4 and an extended Forth. It should not be very difficult to give Stoic full graphics capability for the Torch.

CPMgg 504 Fig Forth, misc BASICODE.

Forth is the most popular Threaded Interpretive language and, like Stoic, is very much faster and more efficient in terms of code size than BASIC. There are several books available on Forth to get you started. The Forth interpreter should run on the Torch. The comments and documentation are in English for the Fig Forth interpreter. There are several other programmes on this disc in BASICODE but the comments and documentation are in Dutch.

UK02 Macro Text Editor

In common with the other discs, I have been unable to try these programmes but they promise to be a very useful editor especially for someone without the Perfect Software.

UK5 Misc Utilities

The CAT files caught my eye on this disc. These allow you to build a catalogue of your discs. There is also a Z80 assembler Z80ASMUK.*. I understand that this is a fundamentally sound assembler but it does not always flag illegal code. If you want a Z80 assembler, you can choose between this one for £12.50 and M80 Macro assembler at about £150.

UK8 Misc Utilities

The interesting items here are the XREFASM.*. files. This programme is useful if you have the Z80ASMUK assembler because it allows you to generate a cross reference listing from the print listing produced by the assembler. This is a valuable aid to programme debugging. ZDIS is again for assembler programmes and will disassemble Z80 programmes.

UK9 Misc Utilities

RESOURCE which consists of the REZ80.* files is a disassembler which has a very good reputation. It can cope with Z80 code and should be invaluable to any assembler programmer who likes to take other people's programmes apart to see what makes them tick.

UK14 Misc Utilities

Once again, the programmes on this disc are likely to be of interest to assembler programmers. ZSID is a powerful symbolic debugger but it requires a symbol table, SYM.* will generate a suitable symbol table from M80 assembler output.

Siq/M 43 TINCMP compiler and Pidgin Programming System

Your bet is as good as mine about this compiler system but it looks as though it should work on the Torch.

The following discs are on order but have not yet been received at the time of writing. They should, however, be in stock by the time you read this or shortly afterwards.

UK15 Small C, Telex

This disc consists mainly of Small C, a subset of 'C'. For those not familiar

Sig/M 119 HYE 11

Sig/M 135 Misc Utilities

Sig/M 144 Misc Utilities

919/M 148 LISP, Misc Utilities.

Sig 154 Forth 83

Sig/M 156 Misc Utility

This selection of software is very much a personal one and is not intended to be representative of the software available. There are many business packages and to see the full range, you should obtain the library disc.

As an example, you may wish to order the following:-

| | |
|-----|--------|
| UK2 | £12.50 |
|-----|--------|

Plus the following extra files

| SIQ/M | 53 | 10 tiles | E2 |
|------------|----|----------|----|
| BONUS.DOC | | | |
| BOOK.DOC | | | |
| EXTF.DOC | | | |
| FRIEND.DOC | | | |
| HOOH.SAM | | | |
| IDUMP.COM | | | |
| INF01.DOC | | | |
| INF02.DOC | | | |
| INF03.DOC | | | |
| INF04.DOC | | | |

SIDE LIGHT 1

| | | |
|------|-----------|--------|
| | INFOS.DOC | £2 |
| UK12 | FORTH.DOC | £2 |
| | total | £18.50 |

Please do not consider this to be a sensible selection of files! It is purely given as an example.

When ordering discs, please quote your membership number and the SL number of the disc(s) you require at £12.50 each. When you require extra files, please quote the SL number and the full file name for each file you require, £2 for a maximum of ten files per disc. Please also include a label with your name and address - plain paper will be alright if you don't have a self adhesive label. Finally, please calculate the total cost and include payment.

In conclusion, may I ask anyone who holds the copyright to some software to consider donating it to the public domain. I am only able to obtain this public domain software by the goodwill of others. If we are able to reciprocate by supplying new software to the public domain, it will obviously be an encouragement. It will also enable us to build up a useful library of Torch software. Of course, if you modify any public domain software, especially if you tailor it for the Torch, please send me a copy for inclusion in the relevant library volume.

Grahame Percnick

SIDELIGHT LIBRARY DISC 01

I have started to build the first Sidelight library disc. At present, it contains the following:-

two variations on key set-up procedures for Perfect Software.

Some configuration programmes for the Epson printers using different character fonts and sizes.

Contributions from Mr. Jozer.

Files associated with this issue - as mentioned after the relevant articles. Examples from an article to be in our next issue!

this is nothing like a full disc. Unfortunately, media, copying and p&p cost the same for a full disc or a 90% empty disc. We will supply the disc for £12.50 all inclusive. Alternatively, if you order one of the other library discs, I will include the files from this one for £2.00.

Of course, this disc will grow as we receive further CONTRIBUTIONS (hint, hint)!

Please note that all public domain software is free of charge. The £12.50 is to cover the costs of the media, P&H and duplicating. I must apologise that we have been unable to include a directory listing for the public domain software above. A full listing of all the discs mentioned above will be published in our next issue plus any others we obtain in the meantime. £0

Perfect? Not Quite!.

A little information about myself and then the picture will unfold with some sense of clarity. I write! I write a lot! If it isn't handouts for lectures I give, then it's reports for committees or other items for publication. I act as a freelance journalist for a local paper and submit articles to such diverse fields as Modern Dance, Computer Education and Psychological Journals. I am also beginning to type chapters for an M.Phil/Ph.D.

Now with that amount of typing, much of which has to be modified at some later date, a word-processing facility became a much sought after one. Much of my practical work at Brighton Polytechnic is based on the BBC/Acorn microcomputer and so I ventured into finding a word-processing facility for this. Indeed I found one that fitted the bill quite adequately - or so I thought.

I came across Wordwise and duly fitted same into aforementioned Beeb. Even the manual was written for a relative 'idiot' and before very long I was poking in commands and text like there was no tomorrow. The snag came - or at least was looming up - with the long chapters for the dissertation. Linking them together was not an easy action. I started printing on an Epson FX80 and produced all manner of fonts, bold characters, underlining, condensed, elite and such gongs and bells.

Then I moved into the 'big boys' bracket and played along with a Brother HR15 printer. This is certainly a robust daisy wheel version, but making sense of this User Manual became a nightmare. In the end I had to resort to some crude, if effective, methods of attaining the desired printing format. At times I had seen mention of the Torch Disk Pack, but this had not registered as the way to go.

What decided the matter in the end was a boost in the computer consultancy and education business I run. What I needed was some form of up-grade from the standard Beeb with its Wordwise. Hence I looked again at the Torch Disk Pack offer. Considerable memory increase and all manner of goodies thrown in was offered. The salient 'goody' was Perfect Writer and the associated Perfect Speller. The Writer offered virtual memory (for those not into the jargon, a kind of endless memory availability) and that was important for the dissertation.

After having checked with the business bank account, I decided on purchasing the Torch Disk Pack and a versatile, daisy-wheel printer. For this I 'plumped' for the Juki 6100 having seen a reasonable review and had it working under stress (me - fiddling with it). I got Akhter Computer Group in Harlow to send me this package and after some slight delay - it arrived.

Great care was given to unpacking - and reading everything in sight at least twice. Then came the moment to put bits together. As ever, the User Guide was written for someone who already knows everything there is to know about it. Someone, somewhere ought to accept in principle that even rank beginners want to use this sort of equipment, not limiting potential use to Computer Science graduates.

As it turned out, I had excellent back-up advice from Denis Such at Akhter - no I don't have shares in their business, but feel praise ought to go where praise is due. Even so the Perfect Writer Manual was less than perfect. It's written as though for an 'idiot' and takes one through activities stage-by-stage. Illustrating what happens on the screen is good, though saving or writing

proved difficult. The way round it was to PBU at the start and use the red function keys.

Formatting wasn't too much of a trial, though again explaining the format error messages was not too brilliant. It's a bit like a 'Syntax Error' given for BASIC. For a beginner, this means as much as "You've made a silly mistake" without any indication of what kind of mistake it is. Being a beginner makes it all the more difficult to work out what was done incorrectly. The best bit was yet to come.

Printing, so the User Guide suggested, was a straight forward operation. Don't you believe it! Despite reading through that section time after time, it was nearly sheer chance that prompted me to try a *FX5,1 - that worked. Well, it would have worked if the printer I had was this 'vanilla' type as suggested.

Configuration - that is making sure the computer recognises how to make your printer do what you want it to - is right at the end of the book! For this you need not only a degree in Computer Science but one in para-electronic linguistics. I would have gladly offered a substantial reward to anyone who could have juxtaposed the Juki manual and the configuration advice notes and make the two provide the answers. As it turned out, I think I've more or less cracked this problem.

I might even still graduate to multi-buffering and split window editing. Who knows what glories I may eventually transcend to? As it is I'm gradually re-writing the manual for Perfect - for my own benefit. The mind boggles as I realise that Perfect Calc and Perfect Filer await translation as well. Well, we're not all perfect!

JOHN V. TAYLOR-BYRN

ISSUE 2 OF PERFECT SOFTWARE

Issue two of the Perfect Software is now available from your dealer who will make a copying charge of £10. The main improvement is 'PWCUS10M' - this allows the Delete key to function correctly. If you have difficulty obtaining a copy of the discs please let me know - I may be able to help.

PERFECT WRITER / WORDSTAR

I purchased my BBC with the Iorch 280 discpack, monitor and Epson FX80 printer some six months ago. With it, I received the Perfect Software suite of programmes, a stack of manuals and some photocopied typewritten sheets. At the time, I lived in Nairn in Scotland (just east of Inverness) and the nearest dealer was in Glasgow - at least, I couldn't find any closer. Now I live in Trondheim, Norway and who knows where I can find a dealer now.

My first experience on connecting up the system was that none of the drives would format new discs as instructed by the manuals. The dealer (Compscot), however, came up trumps and sent me a new discpack without waiting for the faulty one to be returned. The next snag was that no matter what I typed into the machine, I couldn't get into the CPN. It took a few phone calls to establish that I'd been given the multi-user chip and that the command was MCP.

My primary purpose in purchasing the system was to use it for word processing and I therefore set about what ought to have been a simple process, to configure the PW to the Epson FX80 printer. It wasn't - simple, I mean - and I'm glad to see that apparently others have had similar difficulties. Or so it seems since the Editor has announced an article on the subject. That has helped to rebuild a bit of my shattered confidence since perhaps I'm not such an utter idiot after all. In the final instance, I ended up adding the initialising - italics - and boldface strings to the Vanilla configuration and that works well enough.

Next, I set about learning to use Perfect Writer. I had the advantage of having gone through a three evenings' course some months earlier at Inverness Tech, learning up on a dedicated machine and possibly because of that, I found it reasonably easy to get the hang of things. Even if I got a bit fed up with the way Perfect Software were congratulating themselves on their cleverness, I found the manual and the lessons on the disc quite easy to understand and reasonably comprehensive and I soon got the hang of things.

One quirk that took me a long time to find out was that Americans tend to spell English as it is written i.e. CENTRE is spelt CENTER. The same thing applies to Perfect Speller - colour, honour and valour have all lost their 'u's.

One feature keeps irritating me - I have to backspace with the cursor key and then use the delete key if I want to delete backwards. I wonder if anybody has found a way to cure that? There's also another thing that's made me blow my top on a few occasions. If I happen to touch the copy key (I think) the drives hang themselves up. They go round and round forever until I hit the break key and lose all work. Does anybody have a software way to disable these two keys?

It's also irritating - and should be unnecessary - to have to use ESC B over and over to jump words backwards. I know I can use the meta command (ESC(n)) but then I first have to count the words - which assumes I can count. Why isn't there an autorepeat on this group of commands?

Recently, I have had occasion to use Wordstar for a while, which gave me the opportunity to compare the two. WS, having been around for a while, has sort of become the industry standard against which all comers are measured and I suppose that's not a bad thing. My frame of reference, however, may not be entirely fair as I used WS on an ancient Altos without cursor keys.

WS did have proper delete/backspace and autorepeat word jumps - those features I missed with PW. WS also has a proper tabulator line with the status line

above it where you can distinguish it from the bottom line of your text. The tabulator function is far superior to that of PW and it is a boon to be able to write in the margin - I suppose that is possible with PW but I haven't yet found out how.

Another feature which I like with WS is that you're told when you've reached the end of a page - it happens all the time with PW that I finish a letter with the last line or two sitting forlornly on the top of the last page (that will probably happen with this article as well.) When you know, you can always rearrange things.

It is probably a matter of taste but I prefer the STYLE commands of PW to the point commands of WS. The typeface commands of PW (underlining, boldface and italics) are also superior to those of WS. On the other hand, I have been unable to make any use of the numbering of chapters, sections etc. - I think that's probably one of those things that look nice on paper but are useless in practice. I've found the seven buffers fairly useful, though, as I sometimes combine sections from various documents into one.

When I used WS, I had the occasion to use Mailmerge, which I found quite easy to use. I have not yet had the need for a similar function on PW. I suppose it has to do with the INCLUDE command but the explanation given in the manual is a bit thin, to say the least. I would be grateful if someone could throw light on this.

I don't think WS has a word count feature, at least I haven't found one. PW has got it with Perfect Speller and that is quite useful as it can tell me that this article is just over 1200 words long, a piece of essential information when figuring how much the Editor ought to pay me.

I just used another nice feature of PW which is missing from WS and that is CTRL I for transposing letters - I have the tendency to get certain letters the wrong way round. ESC T will do the same for words.

I hope the notes on configuring the FX80 promised by the Editor will tell us how to use such nice features of the Epson as condensed-,enlarged and elite size modes. There's a printer ROM for the BBC, of course, that does that but I don't somehow think that will help us with PW.

One would have thought that those clever chaps at Perfect Software would have had a good look at WS before they wrote their own wp suite but that doesn't seem to have been the case. There must be a definite opening for someone who will write a programme to combine all the attractive features of both and make sure we can use all those nice functions of the Epson.

The Editor also asked about Perfect Calc. and Perfect Filer. I once saw the latter spelt as Perfect Failer and that, as far as I'm concerned, is pretty accurate. As for Calc, I haven't been able to get it to replicate formulae, which is a nuisance. Otherwise, it seems to work alright.

TOR TORKILSEN (NORWAY)

Manuals - What's Available?

From speaking to a number of IOP users, it seems that there is a lot of confusion about which manuals they should have and can obtain. In order to add more confusion, this article will attempt to describe what is available.

There are four manuals relevant to the Iorch Disc Pack part of the system. There are three manuals for the Perfect software and there are manuals for each of the options.

To summarise the available manuals, they are as follows:-

- (a) IOP User Guide
- (b) User Guide
- (c) System Guide
- (d) Programmers Guide

Above are the four guides to the Iorch and Disc Pack system.

- (e) Perfect Writer and Perfect Speller
- (f) Perfect Calc
- (g) Perfect Filer

Above are the guides for the Perfect software.

In addition to the manuals, there are three reference cards - one for each Perfect package. I will only describe manuals (a) to (d) above in detail because they are the ones some people are missing.

IOP User Guide

This guide is A5 sized and navy blue. It is most certainly the one essential manual for everyone with a IOP. If you do not have one, I would strongly recommend you to obtain one. For details of how to obtain one, see the end of this article. The first chapter is instructions on how to assemble the IOP into your Beeb. It is not a very complex task and the instructions are clear but if you are considering undertaking this task yourself, I would recommend that you think again unless you have some suitable experience. There is plenty of scope for making very expensive errors. There is no charge for your dealer to perform this job and he then has full responsibility to deliver a working system. The rest of the manual is well ordered and gives details of how to use the User, as opposed to Programmer facilities. It is not really a step by step instructor in the way the Beeb User Guide is, but it contains much essential information. Most importantly, it includes control codes which allow you to bypass the additional C-series keys which are missing from the Beeb keyboard. The guide is clearly written but has too few examples. Because it is written for Beeb users (ex Beeb users?) there should be cross reference to the Beeb user guide for functions covered there eg. programming the function keys, "VDU" codes etc.

The guide ends with an appendix on Acorn DFS commands. This appendix is rather brief and hence leaves a great deal unsaid. I think it was a nice gesture to include it but would give grounds for a lot less criticism if it had been omitted and reference made to the Beeb Disc System User Guide instead.

User Guide

This guide is of A4 size and royal blue. It is similar in content to the IOP User Guide but is for the C-series computers. It was this User Guide which was supplied with my system but because it was written for the C-series computer, I found it less than ideal. I understand that the User Guide has been superseded by the IOP User Guide for the IOP. Thank goodness!

System Guide

this again is A4 size but black. This guide, too, is written for C-series users. Although it is said to be a "bridge between the User Guide and the Programmers Guide" it is generally written in simpler language than the ZDP User Guide. In fact, most of the topics covered in this guide are covered in the ZDP User Guide. I found Appendix C to be the most interesting as it gives most of the details of the Torch disc format. Be warned, however, that this appendix is as technical as the Programmers Guide.

Programmers Guide

The earlier edition of this (marked Preliminary) was A4 size; the latest edition (marked as First Edition) is A5 size. Both editions are brown. More correctly, this would be called a manual, I think, and it is certainly with this volume that the heartache starts. By Torch standards, it is a thick guide, 125 pages and considering the amount of ground it covers, it is brief - to the point of being terse. Much space is given to MOS executed commands which are documented more fully in the Beeb User Guide. It seems that the problem is that Torch are unable or unwilling to supply a Beeb User Guide with the C-series computers for which this guide was originally written. I can understand their feelings but would suggest rather more space should be given to the general explanation at the start of each chapter. The guide is not written for the novice but is rather a reference manual for experienced programmers. As a professional programmer, I can assure you that I find it hard going. I think the best advice I could give Torch would be to drag a programmer with no knowledge of Torch, CP/M or Acorn products off the street, give him a set of manuals and tell him to write a programme. They should note all his questions and try to answer them in the next issue of the manual. The result would no doubt be very much longer but would also be very much more useful. The advice I will give to a novice is - be prepared to spend a great deal of time, often getting very frustrated but expect a real sense of achievement when you finally comprehend the relevant section! Finally, when you understand an aspect of the manual, PLEASE write an article for **SIDE LIGHT** to let the rest of us in on it especially mentioning errors and omissions. There are few obvious differences between the two editions. The latest edition does have a little more material included. Incorporated in these additions are a schematic diagram of the relationship between the various components of CPN and more usefully, there is an example programme. It is of little consolation that this manual could be far more difficult to follow than it is. The contents do follow a logical sequence even if the content seems obscure at times. If you want to write low level software for the Torch, I'm afraid that at the moment, you have only the Programmers Guide to help. In future issues, **SIDE LIGHT** will, however, try to clarify the procedures.

Perfect Guides

The three manuals for the Perfect software and the reference cards come with every package of course, and so there is little need for me to describe them. The only comment I would make is that you either like or hate the step by step approach they take. I hate it but I am sure that for a beginner, it is much more helpful than the reference manuals which I would prefer - perhaps a reference section at the end would please a few such as I. Torch have written a booklet to supplement these three volumes, it is titled, "Perfect Software on Torch Computer Systems." We are able to supply copies of this booklet for £1.00 all inclusive. This booklet covers most of the problems which subscribers have experienced.

The Torch, as opposed to the Perfect, guides are all available at £7.50 each. If one were to judge the value of these guides by weight, the Users Guide at 36 pages seems way behind the Programmers Guide at 125 pages! We are able to supply these manuals all at £7.50 including p&p (even the Programmers Guide!).

Continued on page 42

Introducing The Torch System

I have received a few simple, even innocent, questions such as "what is the programme super VDU for?" Unfortunately, it would require a book the size of War and Peace to answer these simple questions - hence this series of articles.

As you may have realised, I am not an experienced author so if you don't understand an aspect of my ramblings, please do not assume that it is you being slow, it is more likely me being obscure.. So please let me know - it's the only way I'll find out!

Most readers will be interested mainly in the software for the system. Even if you never intend writing any programmes yourself, it could still prove very useful to have some inside knowledge, so to speak. That way, you may know what questions to ask the next salesman you come across. It may even help you understand his answers. If you don't understand him, press him for more details and you could discover you know more than he does!

It would be possible to describe the software for the Torch without understanding the hardware at all but it will all make more sense if you have an appreciation of the hardware. This first article in the series explains the hardware and subsequent articles will explain the software. Do not consider what follows to be an in depth explanation. When the need arises in later articles, I shall give more details of any specific area.

For convenience, the diagrams for this article appear in the centre of the journal.

It will be helpful to explain a few general principles of computer operation before describing the Beeb. This description is greatly simplified and only includes features which will be useful in the description of the Beeb. If you require greater detail, there are many books and even courses on the subject of hardware operation.

In essence, a microcomputer consists of a microprocessor, memory and an interface to the world outside the computer. This is shown diagrammatically in figure 1.

In operation, the microprocessor reads instructions from memory in sequence and performs the operations specified by the instructions. There are two types of memory - Read Only Memory (ROM) and Random Access Memory (RAM). The information in ROM is, as the name suggests, permanent and thus can only be read. RAM, on the other hand, may be written to and read from. In order that the microprocessor may locate a specific item of information from its memory, each location or slot in the memory has an address. The microprocessor sets an address up on the address bus and may then read or in the case of RAM, write to that address via the data bus. Instructions may either manipulate data or change the sequence of instructions. As an example, an instruction sequence may subtract one number from another and continue with the next instruction if the result is positive or go to some other part of the programme - perhaps an error routine, if the result is negative. It is the ability of a computer to change the sequence in which instructions are performed which gives it the potential to be useful.

The instructions or programme may be permanently held in a ROM or may, in a less fundamental computer than the one under discussion, be loaded into RAM. Although a programme may be held in ROM, it will require some RAM for data which varies as the programme runs eg. intermediate results of calculations.

Any intelligence with which you may care to credit a computer is inherent in the software; not the hardware or the computer itself. This is not obvious at first sight with the Beeb because there are a number of commands to which the computer will respond before a programme is loaded. The answer lies in the ROM, of course.

The computer must have at least a short programme available when it is switched on. This minimum programme is termed a Bootstrap Loader. This may be just ten or twenty instructions - its only function is to load another programme. This second programme is then used to load the user's programme. The other extreme is a computer which controls, say, a washing machine. This will have all its programme in ROM and there will be no means of loading any additional programmes. Even the washing machine computer will require some RAM for the storage of data which changes.

The final component of our fundamental computer in Figure 1 is the interface to the world outside the computer. Obviously, to control a washing machine, this will be connected to things such as the buttons which are used to set the washing programme required, thermostats to test the water temperature and a water level detector. The outputs from the computer will be used to control the various valves and motors.

In the case of a personal computer, this interface would be to a keyboard, display and some sort of mass storage eg. a cassette or disc.

So much for our theoretical minimum computer. Let us now look at the structure of the Beeb and Torch in Figure 2. The hardware we have is based on an Acorn BBC model B microcomputer which is shown in Figure 2 within the heavy outline. The small boxes within this larger area and within their own solid outline represent the structure of the standard Beeb model B. The function for each of these boxes uses between one and a few integrated circuits. The lines connecting the boxes indicate the way data and addresses flow around the system. For the sake of clarity, there is only one connection shown on the diagram between the boxes. In reality, there is an address bus, a data bus and various control signals. It is not possible either to draw in all the details or to fully describe the operation but all the major components are included.

At first glance, it may appear from the Beeb block diagram that all the circuits connected to the bus can talk amongst themselves, in the Beeb this is not so. It is only the 6502 that can set up an address and the control signals required for an information transfer to take place. This means that if some information is to be transferred from memory to, possibly, the printer port, the 6502 must read the information from the memory and then write it to the printer port. The addresses thus all flow from the 6502 to the interfaces. The arrows on the interconnections indicate the possible directions for data flow.

The 6502 microprocessor is of course the heart of the Beeb. This interprets the programmes instructions and controls the rest of the computer. The hardware of the microprocessor itself constrains the maximum number of addresses available. In the Beeb, this is 64k (64 thousand). This may sound like a lot of information but in computer terms, it is rather limited. In order to increase the address range, ie the amount of information which the microprocessor can access, the ROMs in the Beeb are paged. This means that there is a possible maximum of sixteen ROMs which the microprocessor may access - four as standard and twelve extra as an option. The disadvantage of this system is that before a ROM can be accessed, it must be switched into the

circuit and only one may be switched in at any time. This is normally invisible to the operator but it does mean that a programme in one ROM cannot gain access directly to another ROM. If such access is required, it can only be gained by a cumbersome mechanism. There is in fact, another area of ROM in which the Machine Operating System (MOS) is not paged. The MOS contains the programmes which control the fundamental operation of the Beeb and it will be described in greater detail in a future article.

We have so far discussed the 6502 microprocessor and the memory, both ROM and RAM. All that remains are the input and output interfaces. In the Beeb, the input and output (I/O) represent about 80 or 90 per cent of the system!

The screen or video processor operates differently to the rest of the I/O and I shall treat it separately. The remainder of the I/O functions in a very similar way. The act of reading data from or writing data to an I/O port is, in the Beeb, identical to accessing memory. Each I/O port has at least one address in the memory address space.

Before delving deeper into the mysteries of the I/O, another digression is called for. So far, we have a 6502 which performs instructions in a fixed sequence. This sequence is basically a matter of executing consecutive instructions until an instruction which changes the flow is encountered. The instruction sequence is thus determined by the combination of data and instructions and there is no direct way to change the sequence from a stimulus external from the 6502 except from the data content.

This is not a satisfactory state of affairs. Let us look at the common problem of a programme which goes wrong. A frequent fault is that the computer performs the same set of instructions - perhaps waiting for input from a modem on the RS423 when no modem is connected. If, whatever the reason, there is no input, the computer could wait indefinitely. In order to get the computer to do something else, we must somehow interrupt the sequence of instructions. We could do this by pressing the "Break" key. The computer recognises that the break key has been depressed even if it does not read the keyboard port. This is achieved by an "interrupt". This diverts the computer from carrying out the next instruction in sequence to a special "Interrupt Handler" programme. This is, in fact, in ROM so that it cannot be destroyed and will always, well almost always, have the desired result.

There are three interrupt types in the Beeb. The first is the "Break" key which we have already discussed. The second is the Power Up Reset which, as its name suggests, operates when the system is switched on and will be discussed in a future article. The third type is the maskable or normal interrupt which comes from the I/O interfaces and brings us back to the subject at hand.

Most of the I/O ports can generate an interrupt. This means that the computer can either poll each port in turn to see if there is any data for it or it can enable interrupts from those ports in which it is interested. By using interrupts, the computer can perform one task and when some new data is available, the port which has the data can inform the computer of the presence of new data. When the computer is interrupted, it saves the details of what it was doing when the interrupt arrived so that when it has finished servicing the interrupt, it can return to its previous task.

The purpose of the individual interfaces should be fairly obvious from the diagram and the Beeb User Guide details how to use them so I shall dwell on them no longer in this article.

The block diagram is, as I have already mentioned, greatly simplified. The video processing and interface is in fact very complex and operates autonomously to a large degree. There is insufficient space to really do justice to it - but I shall try.

From the diagram, you will see that unlike the simple system we discussed earlier, the RAM is not connected directly to the address and data buses. The reason is that the RAM is shared by the microprocessor and the video controller and thus has its own "local bus". The microprocessor sends the mode and colour information to the video controller in the same way as it writes to the other I/O ports. The video controller then reads from RAM what should be on the screen. The screen must be written to continually because it cannot store the display. This is done by allowing the microprocessor and the video controller to access the RAM alternately. The fact that the microprocessor and the screen share memory is an added complication in the Beeb. Because the amount of information required to write to the screen depends on the screen mode in use, the amount of memory available for programmes and storage varies with mode. The video controller only reads the area of memory required for the mode selected.

BUT do I hear you say, "What about the Torch?" If you have stayed the course thus far, you are about to be rewarded. As most Torch owners will by this stage know the Torch Disc Pack consists of the following parts:

- (a) Twin floppy disc drive with power supply.
- (b) Z80 Card.
- (c) CPN or MCP ROM

I have ignored the need for a power supply up till now and I have no intention of boring you with pages of the why and wherefore of volts, amps and watts or even the more obscure Oersted, Joule and mho. It will suffice to say that the Beeb requires five volts and twelve volts from the two hundred and forty volts mains. The power supply carries out the necessary conversion. The function of the floppy disc drives should be known to all so I shall spend no further time on them. It is interesting to note in passing, however, that although the disc drives are supplied by Torch, the disc interface is supplied by Acorn.

The Z80 card is the original part of the Torch Disc Pack and is now available as a separate item with the CPN/MCP ROM.

The Torch card is unusual in that the Beeb's data and address buses are connected directly into the card and the interface is on the card itself. This connection is known as the 'Tube'. Another interesting aspect is that the Beeb views the Z80 card as a peripheral and the Z80 card views the Beeb as a peripheral. The result of this is that neither of the processors can read or write any of the memory or I/O devices on the other processor's bus. Thus, in order for the Z80 to read the keyboard, it sends a message to the 6502 which reads the keyboard and sends the result back to the Z80 as another message. This may sound slow and longwinded - it is - but there are advantages and these will be amplified in a later article. The Z80 board itself has a very simple structure similar to our original example from Fig.1. It is the ROM which is the unique part of the Torch. It is not obvious from the block diagram in Fig.2 but the RAM spans all 64K bytes of the Z80's memory address space.

When the system is powered up, or receives a power up interrupt, it transfers the contents of its ROM into RAM. This might not seem an advantage because, you may think, the RAM which contains the operating system from the ROM is dedicated to this function. In fact, much of the operating system is not

required when a user programme is running. This means that when you load a user programme, it can overwrite a large part of the operating system in RAM. When that part of the operating system is required, it is simply transferred once again from ROM into RAM so quickly that any delay is imperceptible.

With a CPM system, the same principle applies but instead of the operating system being in ROM, it is on a disc. It is very much slower loading from a disc than from ROM and one must of course ensure that a disc with the operating system is available in the disc drive.

The final component of the Torch Disc Pack is an additional paged ROM which resides on the Beeb's bus. From the discussion so far, one might imagine that this is required to cope with the messages which pass between the Beeb and the Torch eg. to read the keyboard from our earlier example. In fact, this is not so. The Beeb was specifically designed to support a second processor via the tube and these functions are all built into the MOS. What, then, is this ROM for, do you ask. It is, in fact, a disc filing system (DFS). Actually, the C series computers are supplied without the Acorn DFS! The reasons for a different DFS will become apparent in a future article.

I have now covered all the hardware components briefly. Do not consider this to be a general introduction to microprocessors because much of the information given is specific to the Beeb/Torch combination and not necessarily true for other micros. I have also covered the operation only in generalities and those of you who are knowledgeable may consider the description to be over simplified. My defence is that lack of space does not permit fuller coverage. Many areas of hardware operation will be expanded as the need arises.

There have been several references to future articles in this series. The next article will include more details on the way the firmware i.e. software in ROMs, operates and the interaction between the Beeb and the Torch. We shall then have completed the basic principles part and shall be able to look at some of the software.

Grahame Perchick

MANUALS - WHAT IS AVAILABLE? Continued from page 37

I will allow you time to send in your orders and then order all the required manuals from Torch so please allow about four weeks for delivery.

Grahame Perchick

Shall I Buy A TORCH DISC PACK?

The following article was written in response to a number of queries regarding the purchase of a Torch Disc Pack. Since writing it, Acorn has announced their 280 second processor. This comes complete with CPM and a very wide range of software. Priced at £299, it looks extremely good value for money. Even taking into account the advantages of CPM mentioned in the article, it would seem that when it becomes easily obtainable, it will be a very attractive option. It will be interesting to see Torch's response. In the normal course of events, one would assume that Torch would either make their package more attractive or reduce their price. A combination of the two is another possibility. The fact that by the time you read this, Torch will be owned by Acorn is an added complication. If what one reads is true, it seems that Torch will handle business systems. How this will affect us does of course remain to be seen. Hopefully, we will know more by the time our next issue is published.

If you already own a B.B.C. model B, the choice of a second processor upgrade is:-

- (a) Torch (280, CPM compatible)
- (b) Acorn
 - (i) 280 CPM 8 bits
 - (ii) 6502 8 bits
 - (iii) 16/32 bits
- (c) Watford Electronics (280 CPM)

At the time of writing, only the Torch Disc Pack has any user base - the others are just promises. When upgrading to a TDP, an (Acorn) disc interface must be added and a BBC disc filing system (e.g. Acorn DFS) is also required to use the discs in BBC (Acorn) mode. The Watford Electronics CPM upgrade provides double density discs. This SHOULD result in a total data capacity on a dual drive system of approximately 1500K bytes. This compares to a total data capacity of approximately 770K bytes for the TDP. There is at present no double density disc controller compatible with the TDP. For business use, the Perfect Software included in the price will be very attractive.

Because the TDP has its operating system (CPM) in ROM, there are no system tracks on the disc and there is no delay when "booting" in the operating system. Booting takes place when switching the system on and when changing from one programme to another. Neither of the other CPM add ons would seem to have either the "free" software or the operating system in ROM. Few applications will require the Acorn alternatives to CPM ie. the 6502 or 16/32 bit processor. Neither of which have the vast selection of software available for a CPM compatible system.

If you do not already own a BBC computer, the choice of systems is very wide. The major features of a TDP+BBC are:-

- (a) All the advantages of a CPM system.
- (b) Full colour graphics.
- (c) Operating system in ROM (see above).
- (d) "Perfect" software included in price.
- (e) Wide range of BBC software - games, educational and some (rather limited) business software.

you might also consider one of the alternative BBC second processors (see above).

One decision which must be made is whether to obtain an 8 bit or 16 bit system. In general terms, there is little that a 16 bit system can do that an 8 bit system can't. Because much of the available 16 bit software is simply 8 bit software which has been re-compiled, many programmes run faster on an 8 bit Z80 (as fitted in the TDP) than on a 16 bit system. 8 bit software and hardware is also significantly lower in price than that for 16 bit systems.

It is not possible to compare the TDP+BBC combination to any other available computer in general terms because there is simply no other comparable system available at the price! One could compare the TDP+BBC to an Apple IIe plus options. The results of such a comparison will be TDP+BBC provides, on balance, a slightly superior specification at a slightly lower price. Plus the bonus of the "Perfect" packages with the TDP. I have heard, but cannot validate personally, a report that the Apple IIe combination has problems somewhat more severe than those of the Torch. These would seem to stem from the fact that it is of American origin and will not operate satisfactorily with a British standard monitor/television.

One alternative worth considering may be a Torch C series computer. This is substantially more expensive than the TDP+BBC combination but does offer the following advantages.

- (a) An excellent, truly high resolution colour monitor.
- (b) A built in modem.
- (c) A high quality and extended keyboard.
- (d) A system integrated into a strong case.

This is a system designed for heavy office use of the sort which the TDP+BBC would not survive for very long.

Overall, the TDP hardware is of a good standard. The weakest point seems to be the timing of the Z80 board in the BBC case. I have heard of isolated cases of overheating, when used for extended periods, which may be cured by the judicious use of a small fan. These two minor faults should not detract from the hardware.

The "Perfect" software supplied by Torch does have a number of problems but none of these seem insoluble. One aim of SIDEGLIGHT is to highlight these difficulties and to provide the answers.

The remainder of the Torch software and firmware supplied with the TDP (the utilities disc and operating system) is satisfactory. There are one or two minor bugs in my system which may have been ironed out in more recent issues.

The manuals supplied are less than crystal clear but this is a very common fault with personal computers and SIDEGLIGHT will run a series of articles to explain all.

In general, the TDP is compatible with CPM software. All CPM systems require software which uses certain functions, eg. addresses the cursor, to be installed and the TDP is no different. I have used a number of CPM compatible

programmes with no compatibility problems. The disc format used by Torch is not, however, CPM compatible and programmes which use low level procedures may not operate - but this does not apply to the vast majority of CPM software which obeys the "rules".

The resident (CCCP) CPM software commands do contain some minor improvements over the CPM equivalent (the CCP commands). My main criticisms of the utilities disc with the Torch are:-

- (a) Torchbug: though more friendly than the CPM equivalent (DDT), it has less features.
- (b) No assembler is supplied with the TDP. There are public domain Z80 assemblers which SIDE LIGHT will supply. Many CPM users, however, find the standard assembler limited and hence, obtain a macro assembler.

Neither of these shortcomings will affect you unless you intend to write in assembler - not everyone's idea of relaxation! If you do write code in assembler, you will also find that if you don't stick to CPM compatible systems calls, your software may be hardware dependant.

There has been an unfavourable review of the TDP in Beebug. I believe this review to be biased and totally unobjective.

For owners of a BBC model B computer, the TDP would seem to be the only viable upgrade to a CPM compatible system. For a first time user, the TDP+BBC is in a class of its own and this makes comparison with other systems difficult. Even if all of the systems features are not required, it still compares very favourably to other systems. There are some problems, mainly with the "Perfect" software but none appear to be insurmountable. Most systems in any price range suffer from bugs and quirks. For my own purposes, I would choose a TDP+BBC again.

I hope this short review will help you make your decision and I must apologise again for the technical terms I have used but I hope that even a computer novice will be able to obtain the gist of my comments. Technical terms will be explained in SIDE LIGHT of course.

Grahame Perchick

WORDSTAR WITH PERFECT FILER

If you have a file created using Wordstar and you want to print it out using Perfect Writer or Perfect Filer, you have a problem! Wordstar modifies some codes for its own purposes. This does not always matter but if your printer recognises these codes, strange things can happen. With an FX80 type printer, the result is that some of the text appears in italics. Fortunately, on the FX80 one can send a command to ignore these odd Wordstar codes. This is done by entering:-

0A> VDU 2,1,27,1,61,3

DISC TROUBLES

The Mitsubishi disc drives used in the Torch Disc Pack have a good reputation generally. There is, however, the problem of aligning discs when inserting them in a drive. To understand the problem, pick up a disc and, being careful not to touch the surface, stick one or two fingers through the big hole in the centre. By moving your fingers from side to side, you can now move the disc sideways inside its envelope. You will observe that there is quite a lot of movement and this is what causes the problem. When you close a drive with a disc in it, a large spindle comes down into the hole and by gripping the sides, rotates the disc. The difficulty is that unless the disc is in the correct position, the spindle will not be centrally located over the hole in the disc and when the drive is closed, may sit partly on the disc instead of entering the hole. The answer is to ensure that the drive is running when it is closed. If the spindle is rotating when it touches the surface of the disc, it will shuffle it around until the two align and the spindle will then locate correctly in the disc. The way to ensure that you load discs successfully is to issue a keyboard command before inserting a disc which will READ the disc. This may simply be done by typing "DIR". If you are inserting two discs, always close the drive with the disc which will be read secondly. When either disc is read, both will run. If you are inserting one disc only, request the directory of the drive you are about to load. NEVER OPEN a drive while the activity light is on, you can corrupt a disc even if it is being read.

Torch recommend the use of good quality discs with a hub-reinforcing ring. I know of no one who has had any trouble with Dysan discs and Scotch 3M discs come a very close second. Wabash discs are available very much cheaper even than 3M but they do seem to cause a number of people problems - including me.

When purchasing discs, you should ensure that you obtain the correct type. These are: 5.25 inch Double Sided, Double Density, 80 Track. Unfortunately, not all sales staff use the same terminology. It's the last part - 80 track that can cause a problem. Equivalent terms are:

96 track per inch
Quad density

The specification may be abbreviated to: 5.25" DSDD 96 IP1
5.25" DSDD 80 track
5.25" DSDD

Most shops will assume, correctly, that you require soft sectorised, unformatted discs but some more specialised suppliers may require this additional information.

The order number for some popular makes are:

| | |
|-----------|------------|
| 3M Scotch | 747-ORH |
| Dysan | 204/2D |
| Nashua | MD-2F-WP-R |

I use Nashua successfully but I do know people who have problems with them.

If you are in doubt, it is usually the most expensive discs in the range that are required. Beware, however, of discs which have a lower specification. They may work but be unreliable in the long term, or it may only be possible to read them on the drive on which they were written to.

Grahame Ferchick

LOG-LESS DBASE BASELESS.

dBase II is a very useful database system, made all the more useful by a powerful command language which allows it to manipulate several files to achieve the desired result. In addition, it has many of the kinds of functions you might expect in a simple Basic, so that the user can write menu screens, or take a value entered from the keyboard and perform mathematical calculations on that value before entering the result into the appropriate database file.

All the more disappointing, therefore, when we discovered that dBase can't do logs.

Perhaps it should be explained that, in the medical research with which we are associated, many of the parameters of respiratory function can be estimated from other, more easily measurable things, such as height and age. How far an individual strays from these "predicted values" is some indication of the nature of any breathing problems they might have. The equations which relate height to "total lung capacity", for instance, involve logs. If a patient's predicted values are to be stored, as well as their real values, it is necessary to do logs.

Not wishing to resort to looking up values in a log table, it was decided to try and write a routine to calculate the required log.

The first attempt was not a success. Using the recognised standard formula for calculating "natural logs" proved a very long process. Essentially, it consists of a formula which repeatedly adds smaller and smaller functions to the estimate of $\log(X)$, becoming increasingly more accurate as you proceed. However, even after 30 seconds of running, the routine we had written was still not giving us an accurate enough value. We still had to convert to log base 10, and didn't have the odd 30 seconds or more to spare when typing in results.

Our second approach was more empirical. This is not a maths lesson, so we won't go into details, but any mathematical relationship can be approximated between stated limits by taking known values between those limits, and producing a polynomial which relates those values. We took the log of five values between 1.0 and 2.0. The resultant equation was:

$$\text{Log}(X) = (-0.023637 \cdot X^4) + (0.188616 \cdot X^3) - (0.626068 \cdot X^2) + (1.21348 \cdot X) - 0.752388$$

provided X was between 1.0 and 2.0. This gave a maximum error of <0.00006 . Increasing the range would increase the error, but increasing the number of points, while decreasing the error would also lengthen the calculation.

We were going to be measuring the height of young children between 100 and 200cm, so the first thing that had to be done was divide each height by 100 to get within the limit. When the log had been calculated, 2 was ADDED to it (2 is the log of 100) to achieve the real value. Thus the log of 1.452 is 0.16197, and the log of 145.2 is 2.16197.

A typical demonstration program might be:

```
SET TALK OFF
ERASE
STORE 0 TO X
DO WHILE X<100.OR.X>200
    ACCEPT "HEIGHT? " TO H
    STORE VAL(H) TO X
    IF X<100.OR.X>200
        ERASE
        ? "OUTSIDE RANGE 100-200"
    ENDIF
ENDDO
STORE X/100 TO X1
STORE X1*X1 TO X2
STORE X1*X2 TO X3
STORE X1*X3 TO X4
STORE (-0.923637*X4)+(0.188616*X3)-(0.626068*X2)+(1.21348*X1)-0.752388+2 TO LOG
? "LOG OF "
?? H
?? "="
?? LOG
```

This routine is almost instant.

Another application might require a bit more manipulation to get it between limits. Successive division by 2 might be useful, adding 0.30103 (the log of 2) for each division.

A similar equation can be deduced for the antilog. The one produced below has the same limits of 1.0 and 2.0. Where x is the log, it must be between 0 and 0.30103.

$$ALOG(X) = (1.7148 \cdot X^4) + (1.86544 \cdot X^3) + (2.67231 \cdot X^2) + (2.30166 \cdot X) + 1$$

Paul Goodenough

Goff Sargent

Please excuse the varying quality and layout of this issue but the main objective has been to publish our first issue. Future issues should be to a higher standard.

Protection - A Racket?

There are two types of information held on a computer - data and programmes. The need for protection and the methods used are different for each and so they are treated separately in this article.

Data is the information entered when running a programme. In the case of a word processing programme, the data is the document files which you type in. For a database, it is the records and for a spreadsheet, it is the figures. The formulae in a spreadsheet fall between data and programmes and for my purposes, I shall treat them as data.

The protection of data falls into two areas - physical protection and duplication.

Physical protection is, as its name suggests, locking data away and ensuring it doesn't get coffee/ alcohol spilled on it.

Duplication ensures that if data is lost or destroyed, it is still available. This may mean keeping the originals from which the data was entered, retaining a copy of printouts or making duplicate discs.

The method of duplication used depends on the nature of the data and the way you work. The cost of a disc is quite low compared with the time it would take to enter all the data again if one were unable to read a disc. The chance of not being able to access a disc at all is quite low with most programmes because there are few places where a single error could cause this but on some programmes such as a data base, this is not true. In general, it is most likely that access is not possible to a single file or an area of disc. Having said this, sooner or later, you will most likely have a disc which fails. As is usually the case, it will be the one disc which will cause the maximum inconvenience.

A system of 'three disc rotation' is acceptable for most back up needs. The method I use is to label three discs eg. Membership Records and to identify each one by using A,B and C. You start off by formatting and using disc A. When a working session is finished, this is duplicated on to disc B which is used next. Disc B is duplicated to disc C at the end of the next working session and disc C is finally duplicated to disc A and so on in a round robin fashion. For extra security, one can periodically make two duplicates and keep one of them at a different location. This can be once a week or perhaps each time one copies on to disc A.

One must keep a record of which disc to use next. A simple way is a chart with the date and the discs copied from and on to. These charts can conveniently be stuck to a disc envelope, box or on the wall.

I must confess that discs which contain correspondence don't get backed up very often on my system but I always keep the first marked up copy of letters so that loss of a disc would not be too catastrophic. On the other hand, data base files of members are religiously backed up. It is conceivable that a single error in any one of several files could prevent all access to this disc. Although we carefully file all application forms, it would be a long and tedious job to re-enter all the data and well worth the cost of two extra discs and a little time after each work session.

Protection of programmes is as important, due to the cost of some software, as the protection of data but it is simpler.

Continued on page 51

STARTING PERFECT CALC.

This is a very short article aimed at getting you off the home plate with *Perfect Calc*. You will have to make your own way to first base; or wait for another instalment.

- Take a fresh disc and copy the three main *Perfect Calc* files - PC.COM, PC.OVL and PC.SWP from the master disc.
- Copy EXEC.COM from the Torch master disc.
- Either use BUILD, or better *Perfect Writer*, to create a BEGIN.SUB file like this:

```
*TV255
MODE 0
*FX 4,2
*FX 5,1
F 6
B 4
KEY 0 !X!C
KEY 1 ?
KEY 2 !Z
KEY 3 !V
KEY 4 !L
KEY 5 !X!S
KEY 6 !X!R
KEY 7 !X!W
KEY 8 !X!B
KEY 9 !Xb
KEY 10 !X0
KEY 12 !B
KEY 13 !F
KEY 14 !N
KEY 15 !P
KEY 11 !CW
EXEC !X!MPC!M
VDU 12
```

- The function key settings are those from the PGO.SUB file supplied by Torch, but the rest of the commands in this file mean that it works ¹.
- Enter *CPN to reboot the Torch system.
- Press <f9> - you should end up with a blank spreadsheet on the screen.
- Press <f1> - you will get the prompt sheet at the bottom of the screen.
- Explore away, you can't do much harm to anything to start with ².

Bob Janes

1. EXEC uses some of the function key storage and f7 and f8 may not do what you

expect. If this is a problem then leave out the EXEC line and enter PW to the prompt after running BEGIN.SUB.

2. I have only encountered two real problems: it is very easy to forget where the region marker is and to replicate or delete a much larger area than expected; and there is something wrong with the multiple Yankback <esc>y - if you enter <esc>y <esc>y the right things seem to happen most of the time

PROTECTION - A RACKET? Continued from page 49

Whenever you obtain a new programme disc, ensure that a write protect tab is fitted - if not, fit one. Then duplicate it and fit a write protect tab before you do anything else. Label the duplicate as a Sub-Master and store the Master and Sub-Master at different locations if possible.

Having produced a Sub-Master, it is safest to use this only to duplicate on to another disc which will be your work disc.

In general, the cost of a couple of discs is only a very small proportion of the cost of software and hence well worth the effort. As an additional safeguard, it is advisable to fit a write protect tab to your work disc. It is a very bad principle to use a programme disc for data as well.

It is generally most convenient to have several programmes on a work disc because you often want to use them together. For example, you should have a word processing package on your data base disc because you require both for form letters.

To conclude, it requires very little time or effort to ensure the safety of your programmes and data and it could save a major catastrophe if your business relies on your computer data!

Grahame Ferchick

NEXT ISSUE

Our next issue will include details of how to format a printer, a detailed application of Perfect Calc, an introduction to hard discs, the next instalment of the Introduction to the Torch Disc Pack and, of course, letters - so please write to us - we are still very short of material.

NOTES

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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