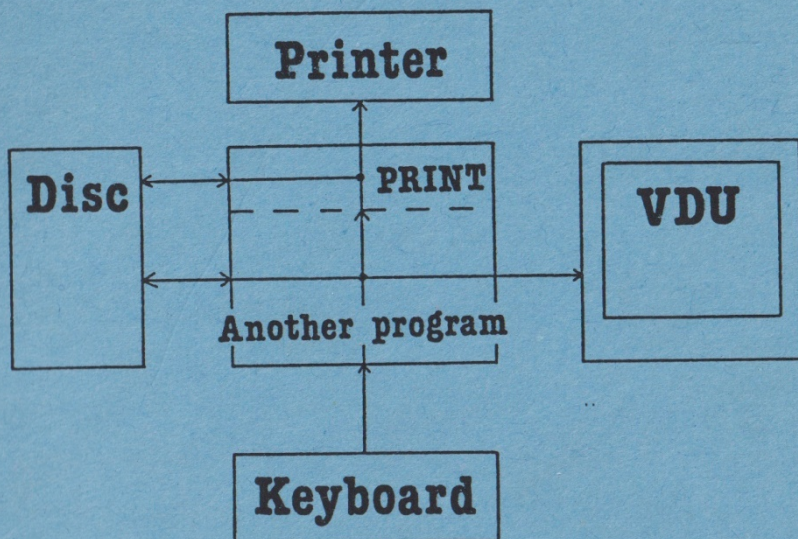


40/80
track
disc

PRINT

for the BBC Microcomputer



A background printing utility

PRINT

for the BBC Microcomputer

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A background printing utility

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This manual and the associated disc are easy to copy - no protection has been used. It is difficult to refuse a friend a copy, even though it is illegal. I ask that if this program (and manual) are worth copying, you send me £2.50 for each copy you make (the reproduction fee - get it off your friend!) I'd also like to add your friend to my mailing list, so please send their name and address as well. Thanks for your co-operation in defeating software theft.

Comments on the PRINT program and manual are invited at the address below.

I would like to thank Paul Beverley for his advice and work in marketing this program and manual.

In this manual, VIEW refers to the word processing program published by Acornsoft Ltd, and Wordwise to the word processing program published by Computer Concepts.

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1 What PRINT does

Printers are usually the slowest part of a computer system; if you use a word processor or write programs you are probably used to having to wait for your printer, unable to continue using the computer until it has finished.

PRINT allows you to print at the same time as using your computer for other work. When you are typing, the computer spends a lot of time just waiting for you to type the next letter. PRINT takes advantage of this wasted time to get on with printing.

In practice, this means that you can print out a draught of one document while starting work on another. If you are a programmer, you can print out a listing while continuing to test the program, or typing in new parts, or documenting the changes just made. In summary, PRINT frees you from having to work or print.

1.1 What are the disadvantages?

Firstly, in order to be able to print while the computer is doing something else, you must record on disc what you want printed out. This is very simple, and only involves one extra command.

Secondly, as the printing progresses, the disc filing system will have to look at the disc from time to time. This may cause momentary pauses in whatever else you are doing.

And finally, as all programs do, it takes up some (but not much) of the computer's memory. It uses memory equivalent to about one page of text or 1.5K of program.

2 Overview

Once PRINT is loaded, it remains in the computer, adding two extra commands.

The first is *PRINT. This is the command used to print out files from disc, while allowing you to continue using the computer for other work.

The second is *FILE. This allows you to "trap" the printer output from other programs and send it to the disc, ready to be printed out later using *PRINT.

Later chapters consider each command in detail.

Experiment - their use is simple once grasped and the (few) error messages are self-explanatory.

3 Loading PRINT

3.1 Before loading

When PRINT is loaded any text or program in the computer will be lost, so before loading PRINT, save any work you want to keep.

3.2 Loading PRINT

To load PRINT, insert the PRINT program disc, and type

```
*PRINT
```

When PRINT is loaded it displays the copyright message, version number, and the message "Ready". The current "language" (eg BASIC, VIEW) is then restarted to allow it to re-assess the memory available.

The next chapter discusses the use of the PRINT command, but we note here that all the forms of PRINT command described later can also be used when PRINT is first loaded, for example

```
*PRINT book
```

will load PRINT and start printing the file "book".

3.3 After loading

Once PRINT is loaded, it remains in the computer until you press BREAK or turn the computer off. This means that you can continue to use PRINT without having to keep replacing your work disc with the PRINT program disc.

3.4 Changing filing system

This section can be omitted by most readers.

PRINT will only print from the filing system active when PRINT was first executed (which is usually the same as the filing system from which PRINT was loaded.)

If you change filing systems after loading (and executing) PRINT, PRINT becomes totally inactive:

No PRINT or FILE commands can be issued

- Any FILE file is closed
- Printing will stop until you return to the original filing system.

4 The *PRINT command

*PRINT is the command to print some text stored on disc, while allowing you to use the computer for other work. Except when loading for the first time, "*PRINT" can be replaced by a suitable abbreviation, such as "*P.". It does not matter whether uppercase or lowercase is used.

For quick reference, see the separate summary sheet.

PRINT will work with any printer that works with the BBC microcomputer. It is assumed that the user can make the printer work normally. See chapter 38 of the "BBC Microcomputer User Guide" (first edition) - "Using printers" - for further details.

4.1 Status information

Unless an error occurs, *PRINT displays what is going on after executing each command. If you type

*PRINT

on its own, with no commands (more about these later), PRINT just prints its current status - either "Ready" or "Printing".

"Ready" means that PRINT is ready to accept another file to print.

"Printing" means that PRINT is currently printing a file, and so cannot accept another yet.

More detail than shown here can appear, but the messages are self-explanatory. See Appendix A for complete details.

4.2 The commands

There are two sorts of command you can put after "*PRINT".

a) A file name. This tells PRINT to print the file. See sub-section 3 below.

b) A "/" command. The / commands are /S and /C. These tell PRINT what to do with the file it is printing. See sub-section 4 below.

These two types of command can be used alone or together - sub-section 5 explains their use together.

4.3 *PRINT filename

This tells PRINT to print the named file.

PRINT will respond with

Printing filename

For example, to print the file "A.letter" on the disc in drive 1, type

```
*PRINT :1.A.letter
```

Quotation marks are optional unless the file name has spaces in it, for example

```
*PRINT "Chap 1"
```

(Remember that you can abbreviate *PRINT to *PR. or even *P.)

PRINT can only print one file at a time. If PRINT is printing another file when this command is issued, the error message "Can't print another file yet" will be displayed.

If the filing system cannot find the named file, PRINT gives the error message "File not found". See Appendix B (error messages) for more details.

The file to be printed must be suitable for printing. If you try and print a SAVED VIEW document, or a SAVED BASIC file, the printout will probably be incomprehensible, since your printer is unlikely to recognise the codes used.

The summary sheet gives brief details of how to generate files suitable for printing from BASIC programs and from VIEW. The *FILE command (see chapter 4) generates files suitable for printing.

4.4 The / commands

The / commands are /S and /C.

The /S command

/S tells PRINT to suspend printing temporarily. Printing resumes when another /S command is given. While printing is suspended, PRINT adds "(suspended)" to its status message. For example, if the file "letter" was

The *PRINT command

being printed, and you typed

```
*PRINT /S
```

PRINT would respond

```
Printing letter (suspended)
```

and printing would stop.

Printing must be suspended before removing the disc on which the file currently being printed is stored, for example to load a document or program from another disc. After using the other disc, replace the disc containing the file being printed, and "un-suspend" PRINT with another *PRINT /S command.

Another use of /S is to suspend printing while inserting new paper into the printer. Issue the first /S just before the end of the paper, and the second /S command (to resume printing) after inserting the new paper.

The /C command

/C tells PRINT to cancel whatever it is printing at the moment.

Use /C if you want to stop PRINT before it finishes, for example if you accidentally tell PRINT to print an old version of a document. The following dialogue is an example of this (shown while using VIEW; what the user typed is shown in heavy print):

```
=>*PRINT text
Printing text
```

[The user now realises this is the old draught]

```
=>*PRINT /C
Ready
=>*PRINT newtext
Printing newtext
=>
```

4.5 Combined commands

The commands of sub-sections 3 (like *PRINT letter) and 4 (like *PRINT /S) can be combined if required. The general rule is that any combination is allowed as long as it is not ambiguous. [For a precise definition, see Appendix C.]

With a combined command, PRINT first of all looks for any /S

or /C commands, and obeys them. If a file name has been given as well, it then starts printing the file.

The example of cancelling a file and starting to print another given in sub-section 4 could have been made shorter by combining the separate

```
*PRINT /C
```

and

```
*PRINT newtext
```

commands. These can be combined into the single command

```
*PRINT newtext /C
```

This would have

- 1) cancelled the last file, and then
- 2) started to print "newtext".

Note the space after the file name. If the command

```
*PRINT newtext/C
```

had been given, PRINT would have thought that the /C was part of the file name and would have tried to print the file "newtext/C".

5 The *FILE command

5.1 What FILE does

FILE redirects any output sent to the printer to a disc file (but see note later about PRINT). This is useful because PRINT can only print from a suitable file on disc. With FILE any program that usually generates printout (for example a word processor) can be made to generate a file containing the printout, suitable for use with PRINT.

Note that FILE only sends output to disc while it is active (see sub-section 2 below).

If you are familiar with the *SPOOL operating system command, then think of FILE as being like SPOOL except that it intercepts output to the printer and sends it to the disc instead, as SPOOL intercepts output to the screen and makes a copy of it on disc as well.

5.2 Using FILE

Using FILE is very simple. To start sending printout to disc instead of to the printer, type

```
*FILE filename
```

Any subsequent printout will then be sent to the file instead of to the printer.

When the "printing" (to disc) is finished, typing

```
*FILE
```

(no file name) will close the file, which can now be printed using PRINT.

As mentioned above, FILE only sends output to disc when it is "active," that is between the commands

```
*FILE filename
```

and

```
*FILE
```

At other times, printout will appear on the printer as usual.

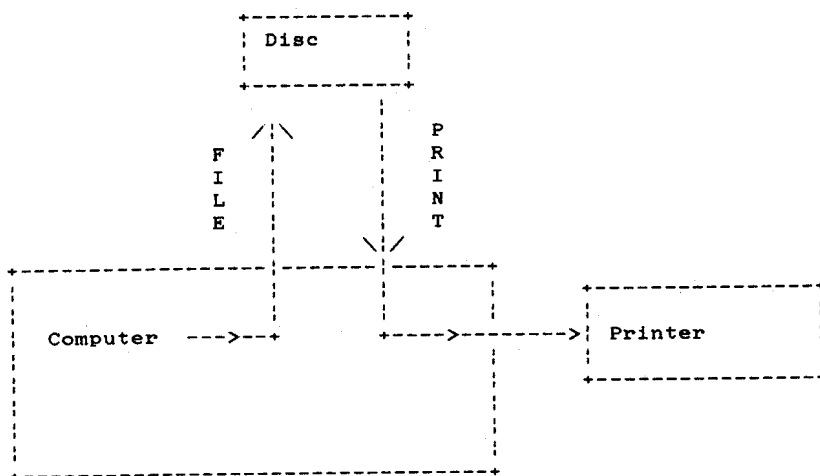
As with PRINT, "*FILE" can be abbreviated using a full stop: the minimum abbreviation is "*F.". (For technical users: note that this replaces "*F." as the abbreviation for

*FX.) Uppercase or lowercase letters can be used.

5.3 FILE and PRINT

FILE is loaded together with PRINT, and so is available whenever PRINT is and vice versa.

PRINT can "see through" FILE, so you can be sending printout to disc using FILE at the same time as PRINT is reading another file and printing it.



6 Using PRINT with VIEW

6.1 Introduction

When you have created a VIEW document you can print it directly from memory (if you are using VIEW 2.1) or save the text and then print it from disc.

The VIEW print command takes the VIEW text, formats it according to the stored commands, and then sends it to the printer driver, which in turn passes it on to the printer with appropriate controls for underlining, bold print, etc.

PRINT takes disc files and sends them directly to the printer, so a file for printing must contain the output that the printer driver sends to the printer, not the original VIEW text. This is where FILE is used.

So to print a VIEW file using PRINT, we must

- a) "print the text to disc" (instead of to the printer), then
- b) use PRINT to print the file (while getting on with other work.)

6.2 "Printing to disc"

- a) Load PRINT, if you have not already done so.
- b) Compose the text to be printed. We will use the file "V.SUMMARY" from the PRINT program disc as an example (this contains the summary sheet as a VIEW file).
- c) Load the correct printer driver for your printer, for example

=>PRINTER FX80

See Into VIEW and VIEW Guide for details about how to load and use printer drivers.

- d) Use FILE, so that printer output is stored on the disc instead of sent to the printer (see earlier chapter), for example

=>*FILE output

This means that subsequent printer output will go to the file "output" instead of to the printer.

- e) Print the document in the usual way, for example

=>PRINT output

Instead of the summary sheet appearing on the printer, it will be stored in the disc file "output".

(NB the VIEW command PRINT and the PRINT command *PRINT are quite different - VIEW's PRINT formats and outputs VIEW document files, whereas *PRINT takes a file on disc and sends it without alteration to the printer.)

- f) Close the file containing the printout ("output", in the example), with the command

=>*FILE

- g) The file "output" can now be printed using PRINT, allowing you to get on with other work while the summary sheet is printed out, for example

=>*PRINT output
Printing output
=>LOAD newbook

[etc..]

7 Using PRINT with Wordwise

7.1 Introduction

The Wordwise print command takes the Wordwise text, formats it according to the stored commands, and then sends it to the printer.

PRINT takes disc files and sends them directly to the printer, so a file for printing must contain the output that was sent to the printer, not the original Wordwise text. This is where FILE is used.

So to print a Wordwise file using PRINT, we must

- a) "print the text to disc" (instead of to the printer), then
- b) use PRINT to print the file (while getting on with other work.)

7.2 "Printing to disc"

- a) Load PRINT, if you have not already done so.
- b) Type or load the text to be printed. We will use the file "EXAMPLE".
- c) use FILE, so that printer output is stored on the disc instead of sent to the printer (see earlier chapter), for example

*FILE output

This means that subsequent printer output will go to the file "output" instead of to the printer.

- d) Print the document in the usual way by choosing option six from the main menu.

Instead of the document appearing on the printer, it will be stored in the disc file "output".

- e) Close the file containing the printout ("output", in the example), with the command

*FILE

- g) The file "output" can now be printed using PRINT, allowing you to get on with other work while the summary sheet is printed out, for example

```
*PRINT output
Printing output

[etc..]
```

A Appendix A - Status messages

This is a list of the messages given by PRINT and when they occur. For error messages, see Appendix B. The messages are listed under the type of command that can cause them - section A.1 for the messages produced by a printing command, and section A.2 for the messages produced by / commands.

After any "Ready" or "Printing filename"
"(suspended)" may be added if the /S command is in effect.

A.1 *PRINT filename

(File name given - and possibly some / commands.)

This command can result in one of the following being displayed (unless an error occurs):

"Printing filename"

if PRINT was not printing another file when the command was issued, or the /C command was used. If PRINT was printing another file and /C was not used, the "Can't print another file yet" error occurs (see appendix B).

"Last file: (error message)
Printing filename"

if an error occurred while PRINT was printing the last file. The error message that was given is displayed as shown. The error condition is cleared. See your disc (or other) filing system manual for the meaning of the error message.

A.2 *PRINT

(No file name given - but possibly some / commands.)

This command can result in one of the following being displayed:

"Ready"

if PRINT was not printing when the command was issued, or the /C command was used.

"Last file: (error message)
Ready"

if an error occurred while PRINT was printing the last file. The error message that was given is displayed as shown. The error condition is cleared. See your disc (or other) filing system manual for the meaning of the error message.

"Printing filename"

if PRINT is currently printing the file shown.

B Appendix B - Error messages

There are five error messages that are produced by PRINT:

B.1 Bad / command - commands are /C, /S

This error (number 128) occurs if anything follows a "/" except "S" (for the suspend command) or "C" for the cancel command ("s" and "c" are also allowed).

To correct the error, re-type the line checking that only the allowed / commands are used.

B.2 Can't print another file yet

This error (number 129) occurs if you issue a

```
*PRINT filename
```

command before PRINT has finished printing the last one.

To correct the error, either wait for the last file to finish printing, or cancel the last file by adding a /C:

```
*PRINT filename /C
```

B.3 PRINT already loaded

This error (number 130) occurs if you try and load PRINT twice. If for example, PRINT had been loaded from disc 1:

```
*:1.$.PRINT PRINT ... Copyright ...
```

```
Ready
```

then it could be reloaded with

```
*:1.$.PRINT
```

resulting in the message

```
PRINT already loaded
```

This does not usually happen because once PRINT is loaded, *PRINT becomes a command to PRINT and not a command to the operating system to load PRINT.

I M P O R T A N T

When this error occurs, the memory will be corrupted (with the second copy of PRINT), and it is advisable to type NEW (or equivalent), or re-start the language before proceeding.

B.4 Filing system changed

This error (number 131) occurs if you issue any PRINT or FILE command in a filing system other than the one in which PRINT was started. See sub-section 4 "Changing filing systems" in the chapter "Loading PRINT."

This error would occur if you loaded PRINT from disc:

```
*PRINT
```

then changed to the tape filing system

```
*TAPE
```

and then issued the command

```
*PRINT book
```

Filing system changed

To correct this error, change back to the original filing system before issuing any PRINT or FILE commands.

B.5 Syntax: PRINT (/C | /S) (<fsp>) (/C | /S)

This error (number 220) occurs if PRINT found things it was not expecting after the command, for example

```
*PRINT filename S
```

This error is most likely to occur if the "/" is omitted before a command (as in the example), or something that looks like two file names is typed, for example

```
*PRINT chap 10
```

If the file name really is "chap 10" (with a space), quotation marks must be used:

```
*PRINT "chap 1"
```

To correct this error, retype the line with any omitted /, and placing quotation marks around file names with spaces.

E.6 File not found

You will get this error (number 214) if you type

```
*PRINT filename
```

but the filing system cannot find the file.

To correct the error, check you have spelt the name of the file correctly and that you have the intended disc in the disc drive.

C Appendix C - Syntax of PRINT

This is a detailed description of the syntax of the *PRINT command and can be omitted by most readers.

If the *PRINT command is followed by parameters, they must be separated from it by at least one space unless

a) the first parameter is a file name enclosed by quotation marks, for example

```
*PRINT "text"
```

b) an abbreviation of *PRINT is used, for example

```
*P. text
```

or

```
*P. /C.
```

Any number of / commands may be used together, separated by zero or more spaces, for example

```
*PRINT /S/S
```

(a pointless command).

/ commands may come before, after, or on both sides of a file name, for example

```
*P. /C newtext /S.
```

/ commands must be separated from the file name by at least one space unless

a) the file name is enclosed by quotation marks, for example

```
*PRINT "newText" /C
```

or

```
*PRINT /C "newtext"
```

b) the / command precedes the file name, in which case where the / command ends and the file name begins is obvious to PRINT if not to a human user, for example

```
*PRINT /Chewtext.
```

D Appendix D - System notes

This is a description of operating system level changes which PRINT makes and can be omitted by most readers.

OSCLI

PRINT intercepts OSCLI at CLIV, adding the commands PRINT and FILE.

OSBYTE

PRINT intercepts OSBYTE at BYTEV, changing the following calls:

OSBYTE 15 "Flush selected buffer class"

If X=0 on entry, the printer buffer is not flushed.

OSBYTE 21 "Flush specific buffer"

If X=3 on entry, the printer buffer is not flushed.

OSBYTE 119 "Close EXEC and SPOOL files"

Any FILE files are also closed

OSBYTE 126 "Acknowledge ESCAPE"

Even if the ESCAPE effects flag is zero (OSBYTE 230), the printer buffer is not flushed.

OSBYTE 143 "Paged ROM service request"

If X=15 (vector change), the the new OSFIND is re-instated (see below)

OSFIND

Any files being used by PRINT or FILE cannot be closed either by closing all files (A=0, Y=0), or by using the (correct) specific handle (A=0, Y=some value).

CNPV

If the routine pointed to by CNPV is entered with X=3 and V set, the printer buffer will not be purged.

The code pointed to by CNPV is inspected to detect the "PRINT already loaded" error, so if CNPV is intercepted by another program after PRINT, it will become possible to load PRINT again.

INSV

If the routine pointed at by INSV is entered with X=3, then unless the calling program is PRINT, and if (and only if) a FILE file is defined, output will go to the FILE file, not the printer buffer.

REMV

REMV points into PRINT when a file is being printed, and while functionally unchanged, can have extra side effects, such as reading characters from the filing system and sending them to the printer.

BRKV

This is changed by PRINT

- a) On loading, to ensure that the language is re-entered even when an error occurs.
- b) Regularly during printing, in order to trap errors.

Programs which do not use these vectors properly, or do not obey operating system conventions with regard to memory usage or other facilities are no more likely to run with PRINT than they are with other intricate software.

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