

microbee Disk System Manual



The MICROBEE disk system provides a CP/M 80 based computer with capabilities far greater than any other computer in its price range.
This manual deals with both the operational and technical aspects of this system.

MicroBee 128K Business Computer User's Manual.

Written by Paul Wilmshurst and Matthew Starr.

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Chapter 1

Setting up and Using your computer



microbee[®]

Chapter 1 - Setting Up and Using Your Computer.

This chapter has been written as an introduction to the MicroBee 128K Computer for people who are new to computers, as well as for people who have had experience with other computer systems.

We will start by showing you the important aspects of the components of the system, and how these components are connected together and turned on.

You will then learn about diskettes and how to make backup copies of your diskettes.

After that, we will discuss how how to use B-Shell.

Finally, we will find out how to use the advanced software that is supplied with the system.

Even people who are experienced with computers similar to the MicroBee 128K Computer are well advised to read through this chapter, because the 128K MicroBee has features that are not found in other computers.

Section 1 - Getting to know your MicroBee.

Your MicroBee computer comes in three parts;

The Monitor,
the Disk Unit, and
the Keyboard Unit.

These units are shown in the diagram below.

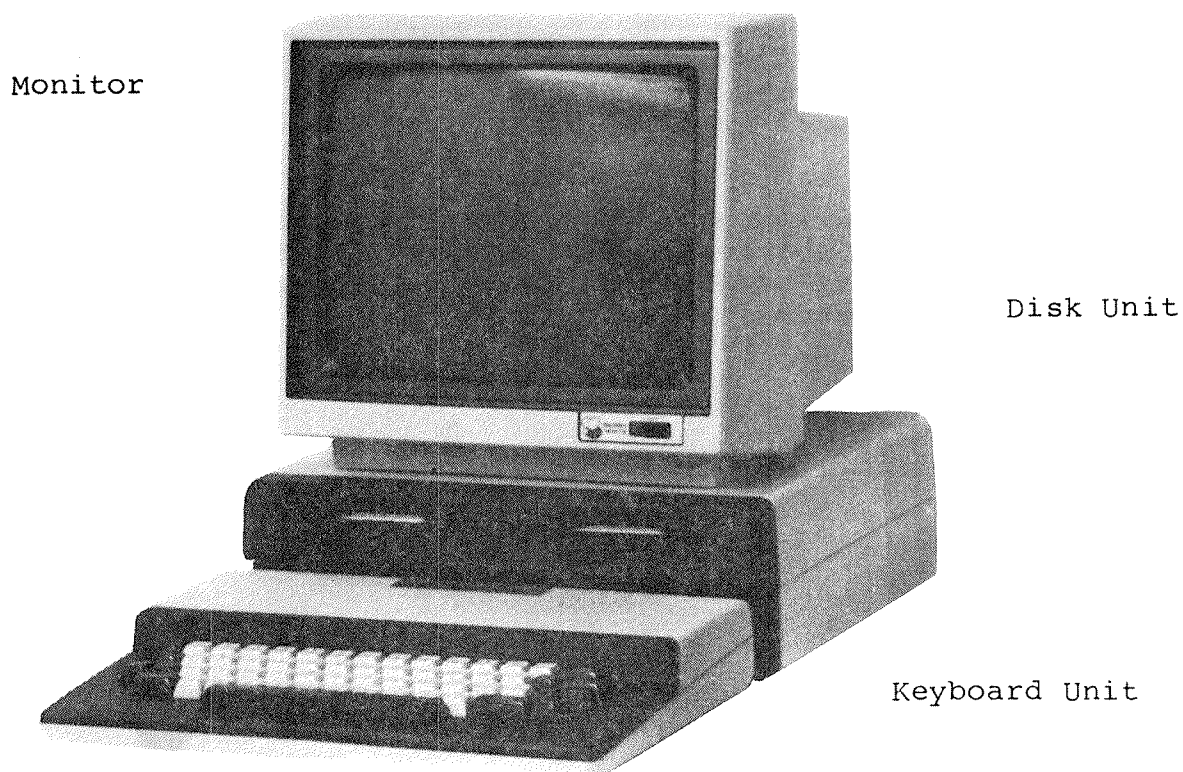
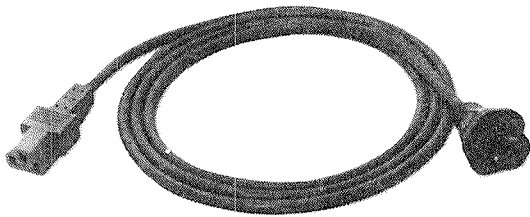


Diagram 1.1 - The MicroBee Computer.

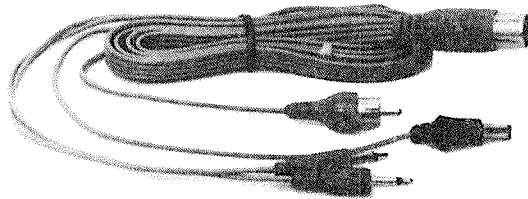
You will have received at least two cables with your computer. You will need these to connect your computer together;

the Mains Power cable for the Disk Unit, and
the Video/Power lead for the Keyboard Unit.

These are shown in the diagram below.



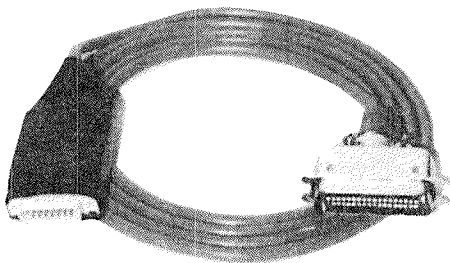
Mains Power Cable



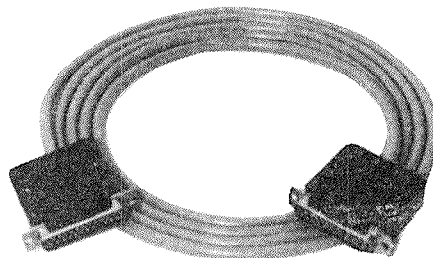
Video/Power Lead

Diagram 1.2 - Cables.

If you have ordered a printer with your computer, then you should have received a cable to connect it to your computer. The cable will look like one of the following;



Centronics Parallel



Serial

Diagram 1.3 - Printer Cables.

The Monitor.

The "Monitor" allows you to interact with the computer because it shows you what the computer is doing. The monitor displays letters, numbers and pictures.

On the back of the Monitor, you should identify the power cord and the Video Input Socket as shown below. (Please note that the monitor that you have received with your computer may not look exactly like the one in the diagram.)

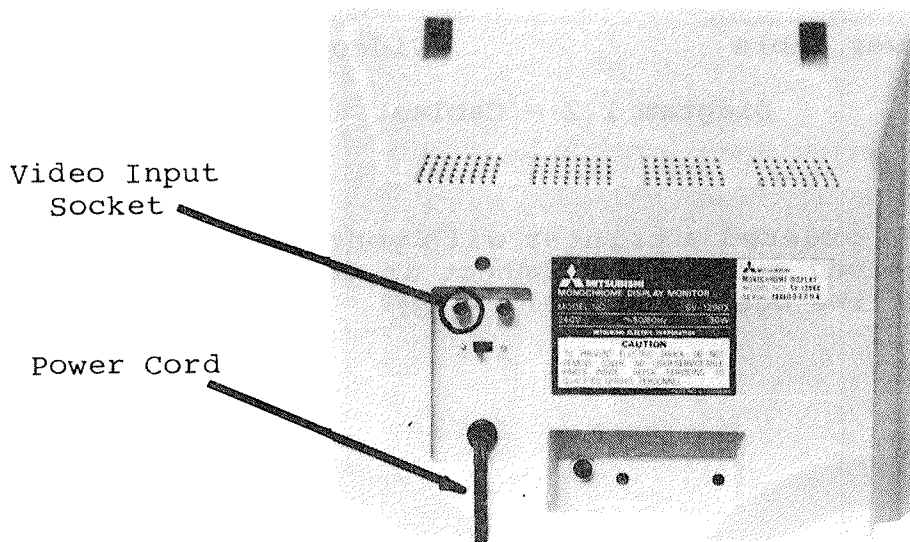


Diagram 1.4 - Rear View of the Monitor.

The Keyboard Unit.

The "Keyboard Unit" contains all of the intelligence of the computer. Technical people may be interested to know that the microprocessor, the memory, the video display generator and the disk controller is contained in this case.

Familiarise yourself with the connectors on the back of the keyboard unit.

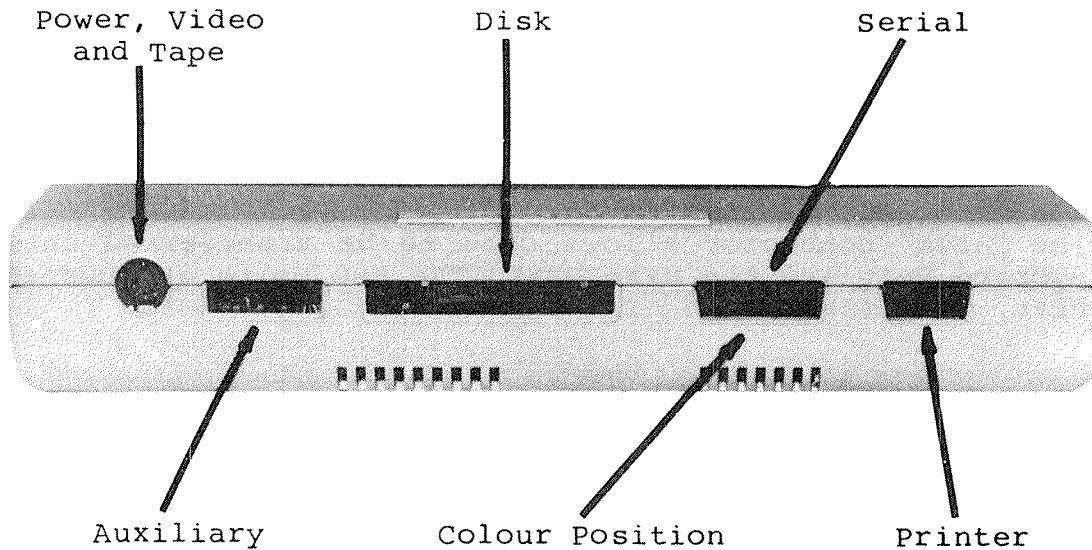


Diagram 1.5 - Rear View of the Keyboard Unit.

Let's discuss what the various connectors do, starting from the power connector.

The "Power, Video and Tape" connector is a round socket. You have a cable assembly which plugs into this socket. One of the leads attached to this assembly goes to the Monitor. This lead has a GREY plug on the end of it.

Another of the leads supplies power to the keyboard unit. This cable plugs into the rear of the Disk Unit.

The remaining two leads may be used to connect a cassette recorder to the computer.

The "Auxiliary" connector allows you to add extra facilities to your computer. This facility is not fitted on most computers.

The "Disk" connector allows data to be transferred between the Keyboard Unit and the Disk Unit. The two units are connected by a flat, grey cable.

The "Serial" connector is used to connect a modem, or occasionally a printer, to your computer. A modem allows your computer to communicate with other computers over the telephone lines. A printer, of course, prints data on paper.

The "Colour" connector connects your computer to a colour monitor. In most cases, you will not be using a colour monitor and this connector will not be fitted on your computer. If you are using colour, then the socket will be fitted and you will need a cable to go between this socket and the colour monitor.

The "Printer" connector allows you to connect a printer to the computer. The printer that you use will need to have a "Centronics Parallel Interface" on it. If your printer does not have this interface, then it may be connected to the serial connector, but this will mean that you cannot have both a printer and a modem connected at the same time.

The printer connector may also be used to connect a "joystick" to the computer for when you want to play games.

The most important aspect of the disk unit is, of course, the disk drives themselves. The two disk drives are called "Drive A" and "Drive B".

Each of the drives is shipped with a protective square of cardboard in it. These cards protect the sensitive "heads" in the disk drive when the computer is being transported. You should always put the cards in the drives when you transport the machine.

You can remove these pieces of cardboard by releasing the locking mechanism on the disk drives as shown in the diagram below. When the lever on the drive points down, the drive is "closed". To open the drive, turn the lever anticlockwise with your thumb and forefinger.

To close the drive again, simply turn the lever clockwise until it points downwards.

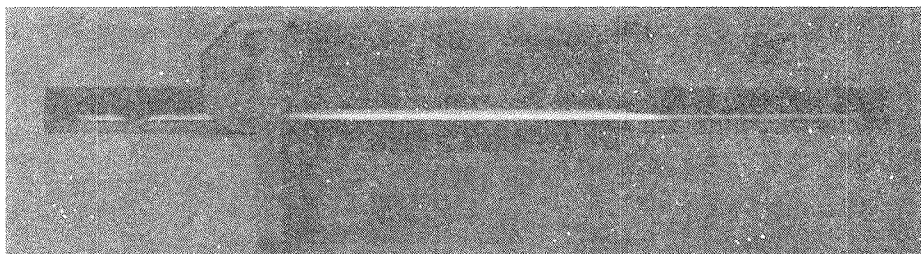


Diagram 1.8 - Drive Closed

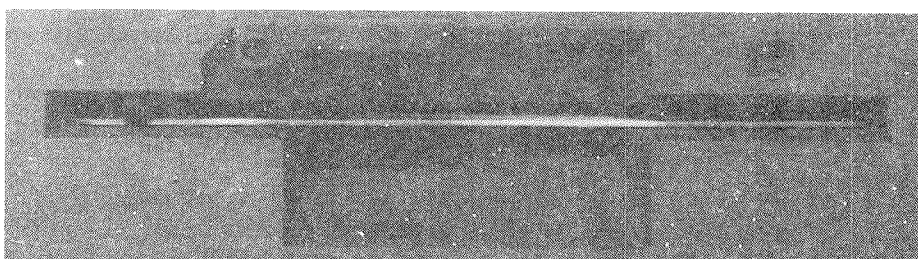


Diagram 1.9 - Drive Open

Section 2 - The Software.

The monitor, the Keyboard Unit, the Disk Unit and the connecting cables form what we call the "hardware" of the system. Hardware is the physical part of a computer.

On the other hand, we call the thing that controls the way in which the computer operates "software".

The software for your MicroBee computer is supplied on a number of diskettes. Computer people are lazy, so we often just call these "disks". The programs and data that make up the software is recorded on these diskettes magnetically, in much the same way that music is recorded on a common audio cassette.

The major pieces of software for your computer are supplied on separate diskettes. However, one of the diskettes that you are supplied with contains a group of very commonly used programs. This diskette is called the "System Master". It is shown below.

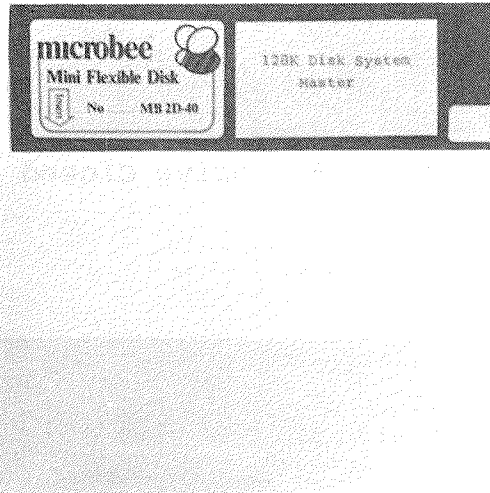


Diagram 1.10 - The System Diskette.

Diskettes.

Before we go on, let's discuss diskettes and some very important things to know about how they should be handled.

Diskettes are always supplied in covers or "sleeves" as shown below.

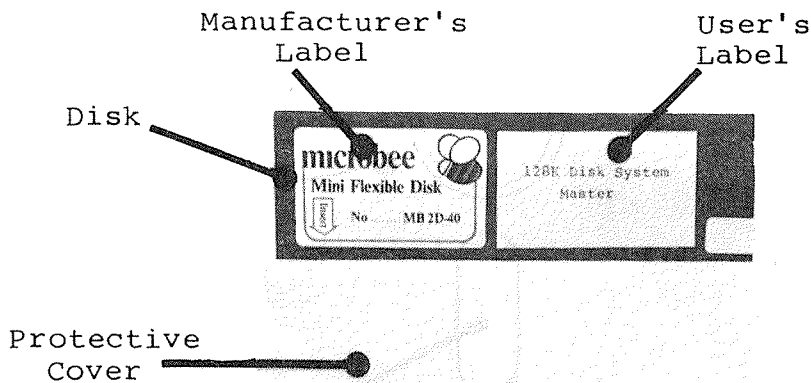


Diagram 1.11 - Diskette Features.

The sleeve protects the diskette from dust and other harmful substances.

Along the top of the diskette, there is a permanent label put there by the company who made the diskette. It is important to leave this label on the diskette because it identifies what kind of diskette it is.

Beside the permanent label, there is normally a second label which identifies what software or data is on that particular diskette. When you buy a box of new diskettes, you will also receive a wad of adhesive labels for this purpose. These labels can be easily removed and replaced if you decide to use the diskette for some other job.

If you take a diskette out of its cover (don't do it just yet), then you can see its business end;

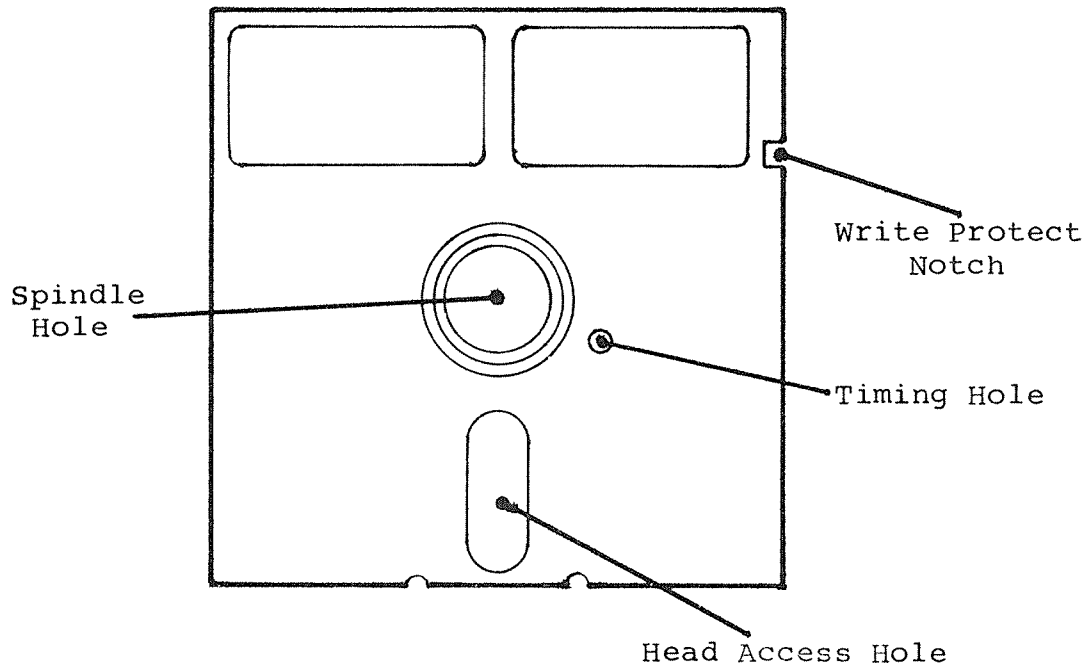


Diagram 1.12 - Diskette Features.

Don't worry if you don't understand any of the terms used in the diagram.

All of the points labelled in the diagram above are exposed areas of the actual magnetic surface of the diskette. It is VERY IMPORTANT never to touch these areas.

Take one of your diskettes and remove it from its cover. Remember not to touch any of the exposed areas. On the other hand, diskettes aren't very easily harmed, so don't be scared to handle them.

Another feature of diskettes, as shown on the diagram above, is the "Write Protect Notch". Normally, you do not need to worry about this notch. However, there may be circumstances where you do not want the information on a disk to be altered.

The process of altering data on a diskette is called "writing" on the diskette. If the write protect notch is left alone, then the writing process can take place unhindered.

On the other hand, if you do not want the information on the diskette to be changed, either intentionally or accidentally, then you can put a small sticker around the notch. This physically prevents the disk drive from writing on the diskette.

"Write protect stickers" are supplied with each box of blank diskettes. They should be wrapped around the write protect notch on the disk as shown below.

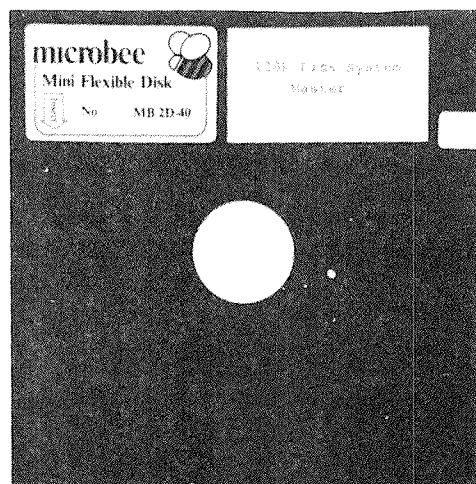


Diagram 1.13 - A Write Protected Diskette.

Whenever you have a diskette which contains important data, then you can put a write protect sticker on it.

If you want to change that data at some later date, then you can simply peel the sticker off.

Backups.

Never leave a diskette in the disk drives when you turn the computer on or off. If you do leave a diskette in a drive when turning the machine on or off, then it is likely that the data on the diskette will be destroyed.

What do you do if the data on a diskette is destroyed?

Well, there is not really anything that you can do.

That is why it is very important to make copies of the diskettes that you use. We call such copies "back-ups".

You might make a back-up copy of a particular diskette that you are using at the end of every day, for instance. Then, if you damage a diskette, you only lose one day's work at most. In practice, you might prefer to make a backup every hour or two.

Remember to label your back-up diskettes suitably.

Also, when you are backing up a diskette, always put a write protect tab on the master diskette that you are backing up.

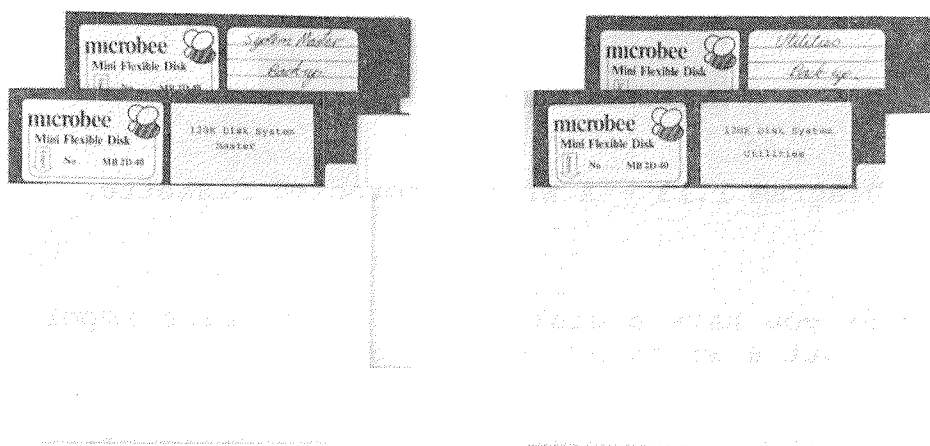


Diagram 1.14 - Backups.

Diskette Handling Precautions.

The last thing to do before we switch the computer on is to discuss the care and feeding of your diskettes.

You should always remember the following points;

- Don't touch the exposed surfaces of the diskette.
The thin magnetic surface of the diskette can be harmed by the grease and dirt on your fingers.

- Always leave the disk in its protective sleeve.
This keeps dust and fingers off the diskette.
Also, try to keep the diskettes in a box.

- Avoid bending a disk.
This can crease the surface of the diskette.

- Never write on a label while it is on the diskette.
This can put dents on the surface. Write on the label BEFORE it goes on the diskette. If you must write on the label while it is on a diskette, use a very soft pen.

- Keep diskettes away from magnets.
Remember that the monitor acts like a weak magnet. Also, the Keyboard Unit has a magnet on the internal speaker. Don't leave diskettes on the top of the Keyboard Unit.

Section 3 - Connecting it all together.

Plug the power cord from the monitor into the mains, but do not turn it on.

Take the power cord for the Disk Unit, and plug its square plug into the mains socket on the back of the Disk Unit. Plug the other end of this cord into a power outlet, but do not turn the power outlet on.

So far, things should look like this;

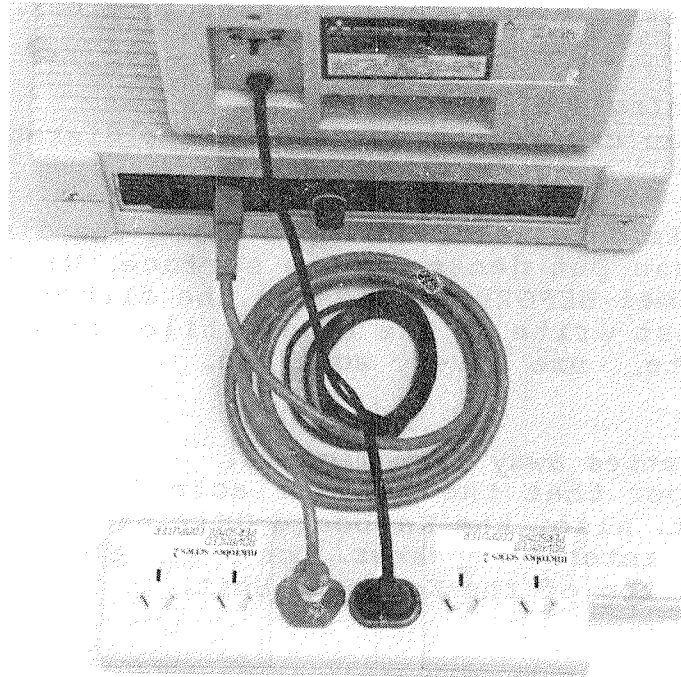


Diagram 1.15 - Mains Power Connections.

Now plug the Keyboard Unit into the Disk Unit. The Disk Unit has a flat cable coming out of the front of it. At the end of this cable is a long rectangular plug. This plug fits into the "Disk" socket on the back of the keyboard unit.

Make sure that you put the plug in the right way round. The plug has a "key" on it; this should be on the underside of the cable.

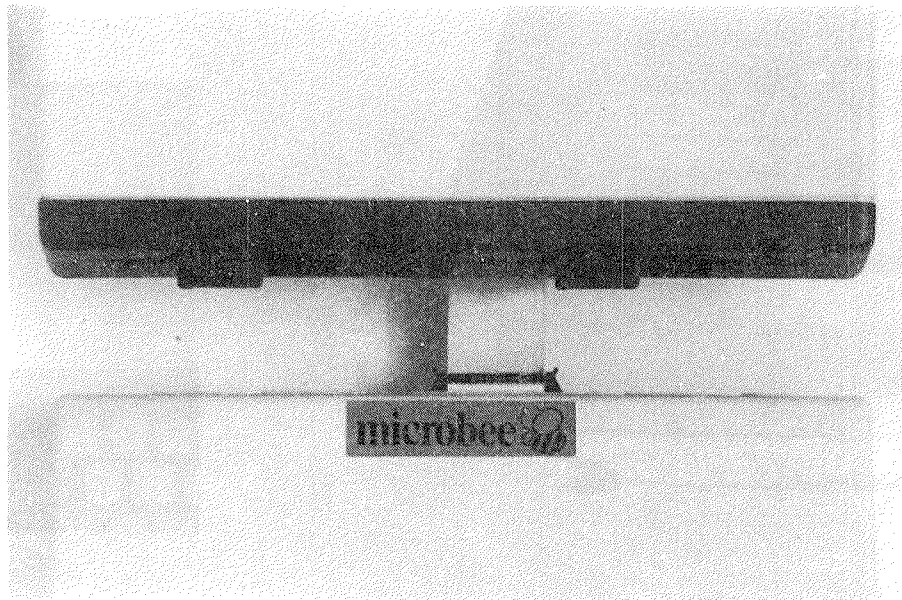
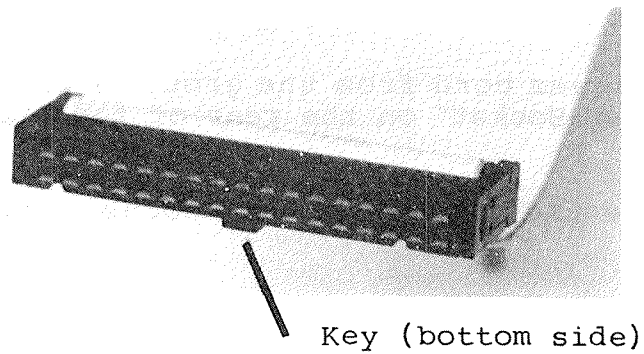


Diagram 1.16 - Keyboard to Disk Unit Connection.

Now the Power/Videocord for the Keyboard Unit must be connected. This cord has four leads coming from a large, round DIN connector. Take this connector and plug it into the Power/Video socket on the back of the keyboard unit.

Now take the video cord from this bundle of wires, and plug it into the "Video Input Socket" on the back of your monitor. The video cord is the longest cord, and has a grey plug on the end of it.

Take the power cord from the group of wires and plug it into the small "Power Socket" on the rear of the Disk Unit.

Just leave the two cassette recorder leads loose.

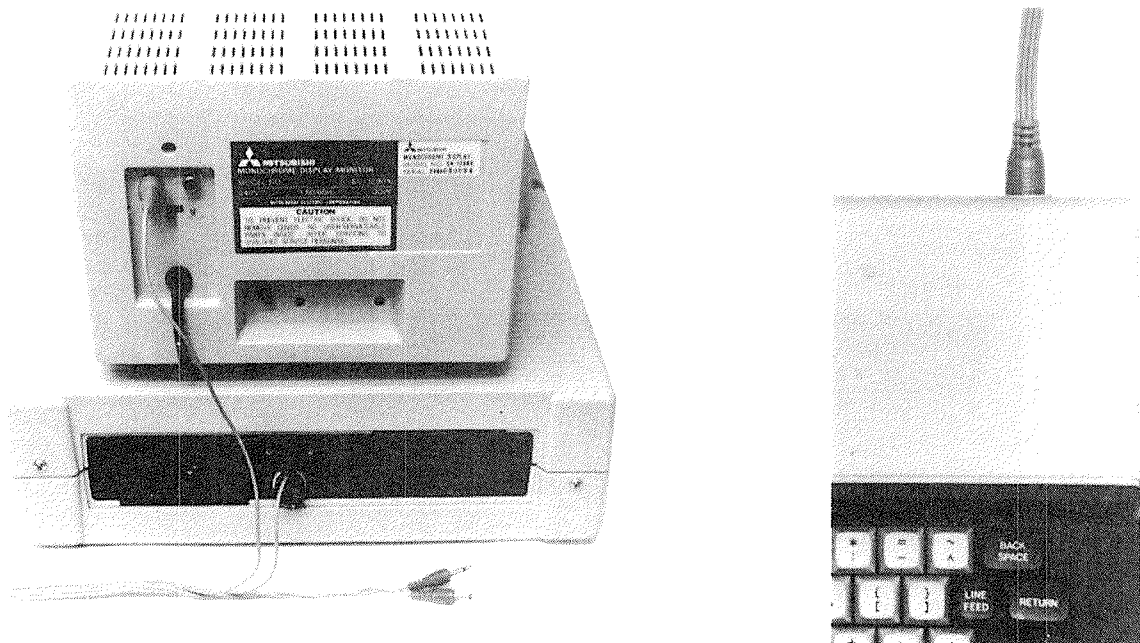


Diagram 1.17 - Keyboard Power and Video Connections.

Connecting A Printer.

You may want to connect a printer to your computer. If this is so, then plug the printer into the mains as described in the manual for your printer. Take the cord for your printer and plug it into both the printer and the computer.

If you have a "Centronics Parallel" printer, then the connection will look like this;

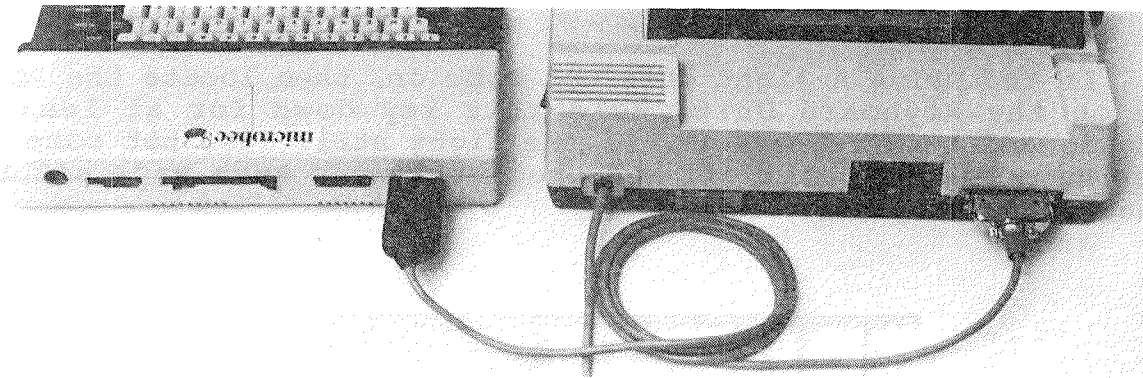


Diagram 1.18 - Centronics Parallel Printer Connection.

On the other hand, if you have a "Serial" printer, then you have to connect to the "Serial Port" on the rear of the Keyboard Unit;

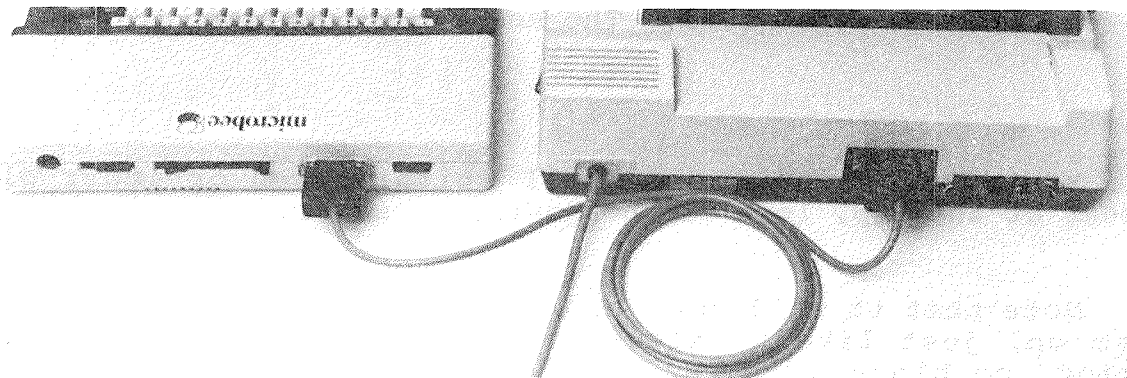


Diagram 1.19 - Serial Printer Connection.

Section 4 - Switching On.

If you have not already done so, remove the protective cards from the disk drives. Leave the drive doors open.

Now turn the mains power to the Monitor and the Disk Unit on. It doesn't matter which you switch on first.

As soon as you switch the Disk Unit on, the "Drive Selected" light for Drive A should come on. You may also notice some noise coming from the Disk Unit.

If the Drive A light does not come on, then locate the RESET key on the Keyboard Unit. Hold this key down for at least 5 seconds and then release it. If the light still does not come on, then turn the computer off and check that you have made all the connections properly.

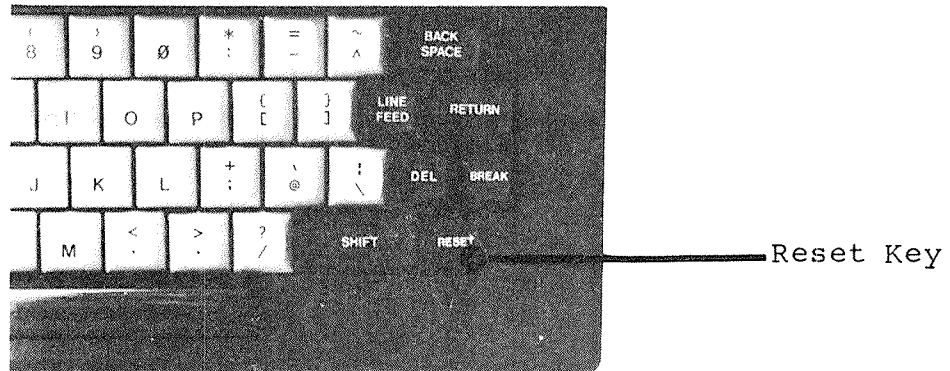


Diagram 1.20 - The Reset Key Location

You should also see a small white, green or amber block appear at the top, left of the Monitor's screen.

Note that it will take 10 or 20 seconds for the Monitor to warm up, just like a television. If, after waiting for this period, no block appears, adjust the brightness and contrast controls on the monitor.

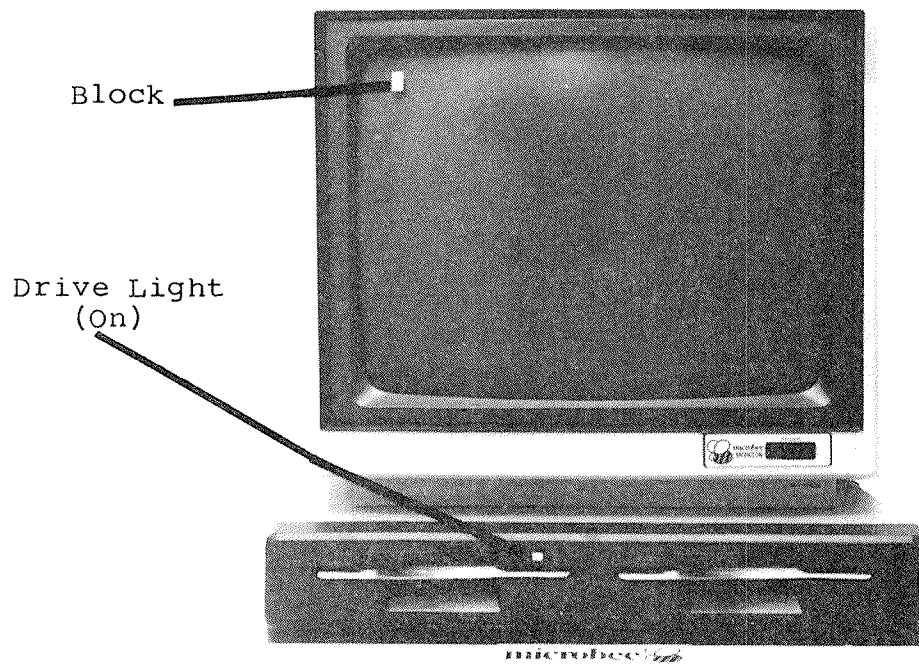


Diagram 1.21 - Display at Power-On.

You must now put your "System Master" diskette in Drive A.

To insert a diskette into a disk drive, you must first remove it from its sleeve.

Check that the door of the disk drive is open - the lever should be horizontal.

Hold the diskette with your thumb and forefinger at the label end of the diskette and push it slowly into the drive, label side up.

When the diskette has gone all the way in, and you hear a slight "click", close the door on the drive.

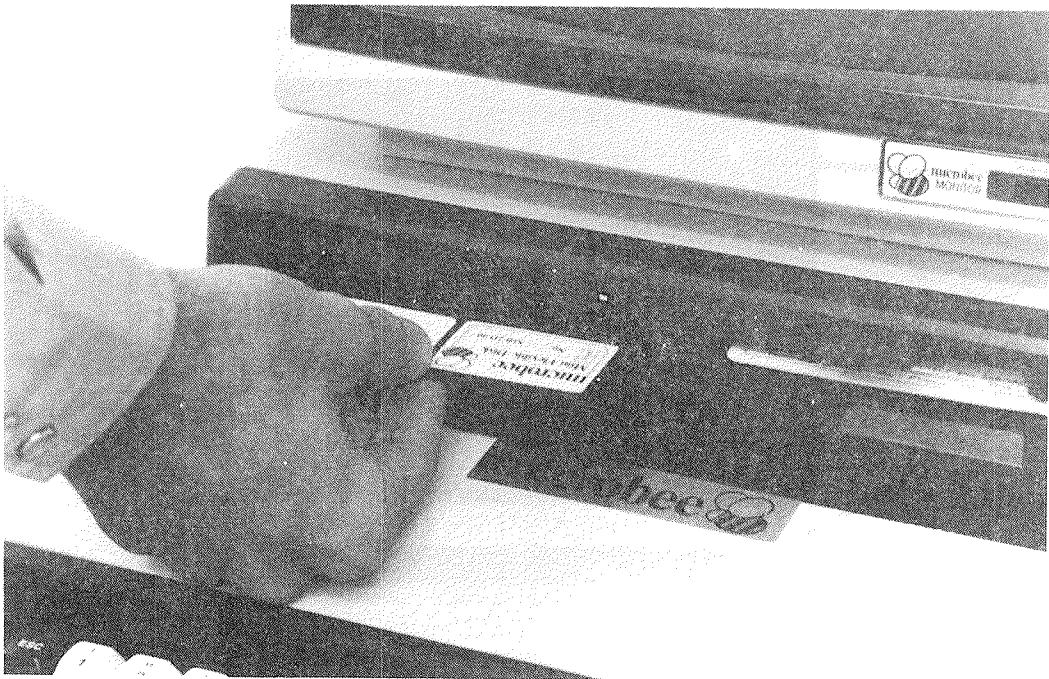


Diagram 1.22 - Inserting a Diskette.

After a few seconds, you should see the screen of the monitor produce a display something like the one shown below.

You can adjust the brightness and contrast controls on the monitor to produce a display that is to your liking.

A:ASUB	.COM	2k	CMPRA	.COM	2k	CMPRH	.COM	2k	CP	.COM	4k
A:DDT	.COM	6k	GOSHELL	.COM	2k	HELP	.COM	10k	INIT	.COM	8k
A:MP	.COM	18k	SETDRIVE	.COM	2k	STAT	.COM	6k	SUBMIT	.COM	4k
A:TELCOM	.COM	12k	TRANSFER	.COM	8k	USER	.COM	42k	WS	.COM	18k
A:CCP	.SYS	4k	HELP	.MAN	32k	HELP	.NDX	2k	INITIAL	.TEL	2k
A:MP	.HLP	40k	MP	.OVR	44k	MP80	.	8k	SHELL	.SYS	6k
A:WSMSG	.OVR	30k	WSOVLY1	.OVR	34k						

A0: Disk A0: uses 348k in 26 files : 38k (9%) free of 386k total.










									CPM CCP 0
1	2	3	4	5	6	7	8	9	

Diagram 1.23 - Screen after Booting.

Section 5 - Backing up your Master Diskette.

What should we do next?

Remember our discussion about backing-up diskettes?

Of course, we must make a copy of the Master diskette that you just put in the disk drive. If something happened to that diskette, then you couldn't use the computer.

Make sure that your master diskette has a write protect tab on it. This will ensure that you won't harm the data on the diskette if you make a mistake.

Take a blank diskette and insert it into Drive B. Do NOT place a write protect sticker on it. You now have to instruct the computer to "initialise" the blank diskette, and then copy all of the data from your master diskette onto it.

To initialise the diskette, hit the '5' key on the keyboard. After a couple of seconds, the screen will look like the one shown on the next page.

If this screen does not appear, then reset the computer and try again.

Now hit the '2' key. This is the command to initialise the diskette in Drive B, and copy certain system information from the master diskette. (You can see all of the commands along the bottom of the screen).

Hit the <RETURN> key. The computer will then initialise the diskette. This will take about one minute.

The process of formatting a diskette simply prepares the diskette so that data can be stored on it. When a diskette is manufactured, its surface is covered in random data; the randomness is removed by the formatting process.

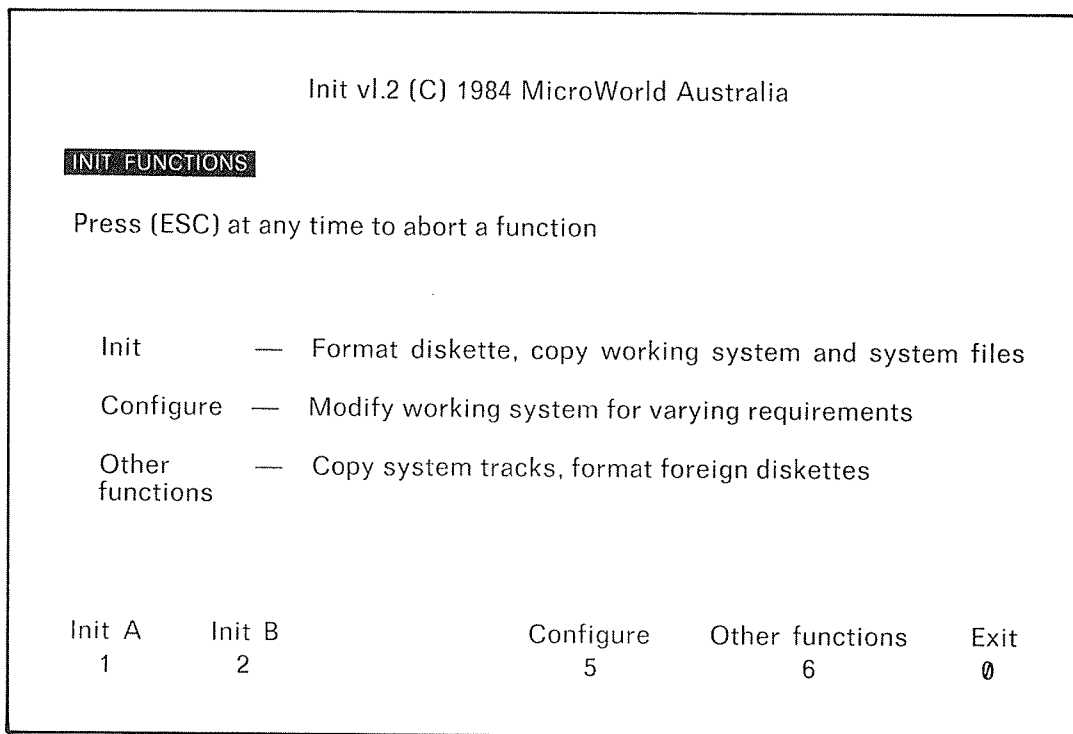


Diagram 1.24 - INIT Screen.

If the message "Formatting error detected ..." appears, then the blank diskette is probably faulty and should be discarded. RESET the computer and start again with a new diskette.

After the disk has been initialised, hit the '0' key. When you do this, the display that you saw when you first turned the computer on and inserted the master diskette will re-appear (Diagram 1.22).

Now you have to copy the data from your master onto the backup.

Hit the '7' key. After a second or two, the screen shown on the next page will appear.

Now hit the 'l' key. This selects the "Copy Files" menu. Then hit '*', '.', '*' and then RETURN.

Now hit 'B', ':', and then RETURN. Hit RETURN again. If you make any mistakes, simply reset and start again.

The computer will take about 2 minutes to copy the data.

If an error message such as "CP/M err on B: Bad Sector" appears, then RESET the computer and start the process from the beginning with a new diskette.

Transfer v1.0 (C) MicroWorld Australia 1984											
A:ASUB	COM	2k	CMPRA	.COM	2k	CMPRH	.COM	2k	CP	.COM	4k
A:DDT	.COM	6k	GOSHELL	.COM	2k	HELP	.COM	10k	INIT	.COM	8k
A:MP	.COM	18k	SETDRIVE	.COM	2k	STAT	.COM	6k	SUBMIT	.COM	4k
A:TELCOM	.COM	12k	TRANSFER	.COM	8k	USER	.COM	42k	WS	.COM	18k
A:CCP	.SYS	4k	HELP	.MAN	32k	HELP	.NDX	2k	INITIAL	.TEL	2k
A:MP	.HLP	40k	MP	.OVR	44k	MP80	.	8k	SHELL	.SYS	6k
A:WSMSG	.OVR	30k	WSOVLY1	.OVR	34k						
A0: Disk A0: uses 348k in 26 files : 38k (9%) free of 390k total.											
Copy Files		Rename File		Display File		Print File		Exit			
1		2		3		4		0			

Diagram 1.25 - TRANSFER Screen.

When the copying process is complete, take your new copy of the master diskette out of the disk drive, put it into its cover and then put a label on the diskette to say what the disk is.

Take the original master diskette out of the drive and file it away.

Now take your COPY of the master and put it into Drive A. RESET the computer, and if the process has worked correctly, the initial screen as shown in Diagram 1.22 should appear.

Section 6 - The Keyboard.

You "talk" to the computer through the keyboard, so it's worth spending some time examining it.

The Australian version of the MicroBee keyboard looks like this;

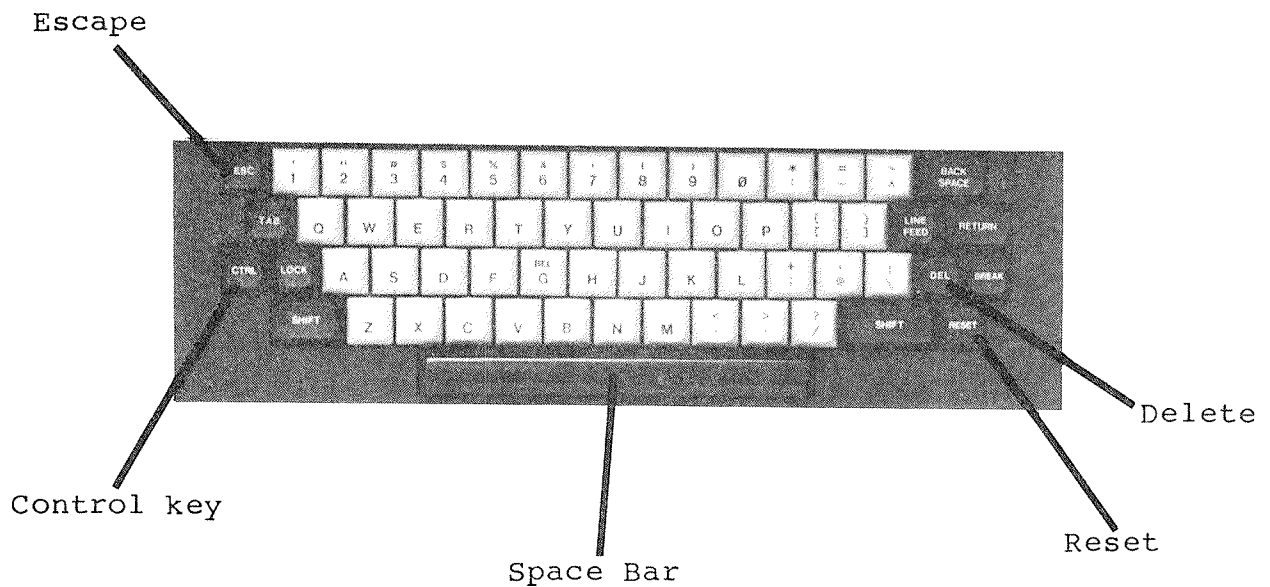


Diagram 1.26 - The MicroBee Keyboard.

The MicroBee keyboard is very similar to the keyboard of most typewriters. If you want to enter a letter, then you just hit the corresponding key on the keyboard.

If you want to enter an UPPERCASELETTER (a capital letter), then you hold down one of the two the "SHIFT" keys and then hit the desired letter key.

If you hit the "LOCK" key once, then you will get upper case letters. If you hold the SHIFT key down, then you will get lower case letters. Hitting the LOCK key again will put you back in the original mode, where using SHIFT will give you upper case letters.

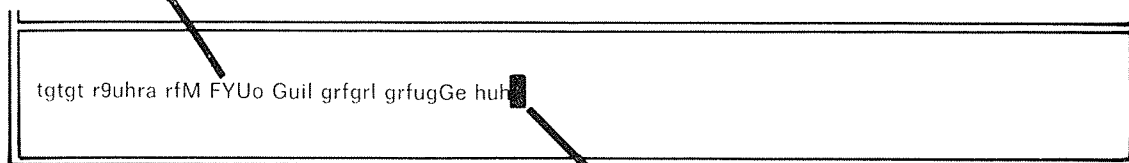
To enter numbers, just hit the desired number key. To enter any of the special symbols that are shown above the number keys, hold SHIFT down and then hit the corresponding key.

Experiment with this by firstly putting the copy of the master disk in Drive A, ensuring that the diskette has a write protect tab on it.

When you type letters, you will notice that the bottom line of the screen disappears and the letters that you type appear on the screen.

Let's introduce some important terms. The letters, numbers and symbols that appear on the keyboard (and on the screen) are called "Characters".

Characters



Cursor

Diagram 1.27 - Characters and the Cursor.

When you type in a character, you will notice a rectangular block moves along in front of what you are typing. We call this block a "Cursor".

If you hit either the BACK SPACE or the DEletekeys, then the cursor moves one space to the left and the last character that you typed disappears.

There are a number of other special keys on the keyboard, and we will discuss each of these as we come to them in the course of learning how to use the computer. However, two of these are very important so we will discuss them now;

The RESET key makes the computer stop what it is doing and re-starts it as if the power had just been turned on. To reset the computer, you need to hold the RESET key down for about 5 seconds and then release it.

However, nothing actually happens until you release the RESET key, so if you hit it accidentally, you can keep it held down while you quickly finish off what you were doing.

Another important key is the CONTROL key. This is used just like the SHIFT key, but sends special codes to the computer.

If you are told to hit "Control-S" (sometimes abbreviated to ^S), then you should hold down the CTRL key, hit S briefly and then release the CTRL key.

Control codes are very important so you should remember this.

Section 7 - Diskettes and The Concept of a File.

The most important concept involved in using your computer that you will encounter is the concept of a "File".

Consider a normal office filing cabinet. It may have, say, two drawers. Each drawer holds a number of folders.

Each of these folders holds a number of pieces of paper. The folder and its contents is called a file.

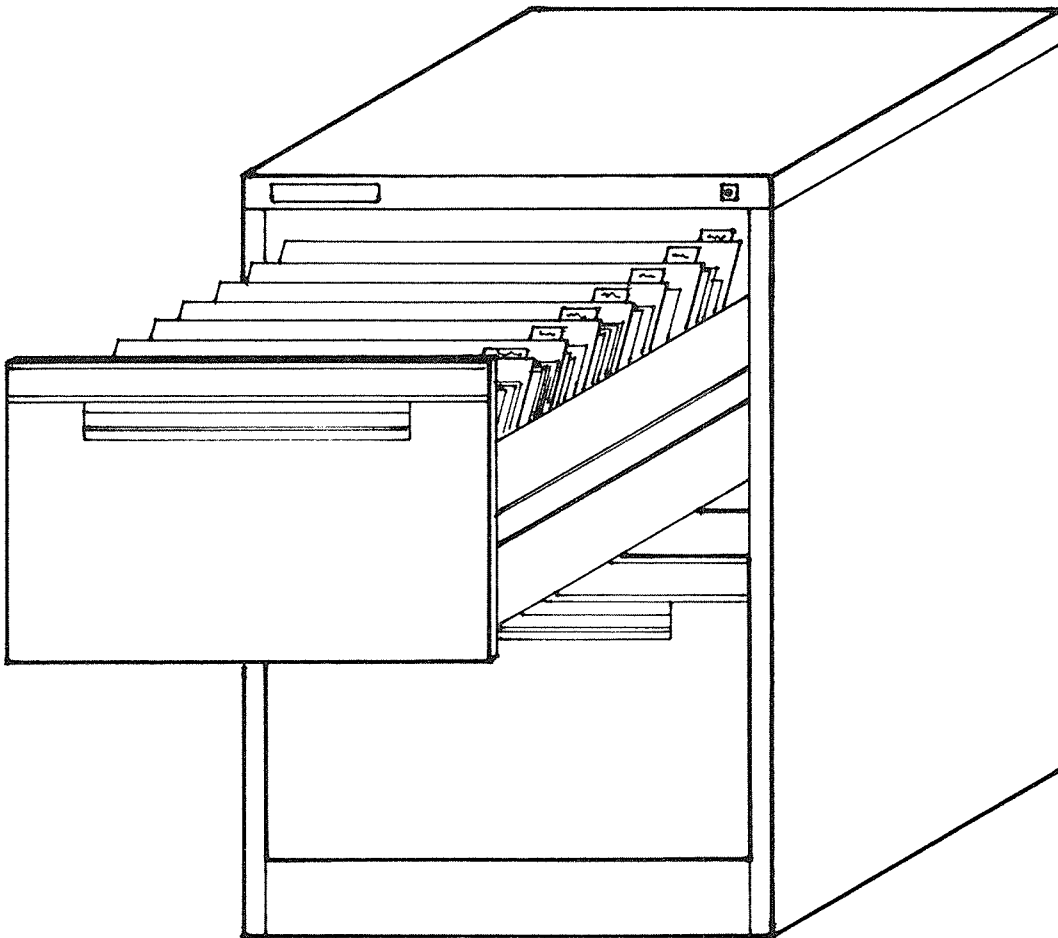


Diagram 1.28 - A Filing Cabinet.

Now, consider the file in the filing cabinet which contains information about P.J. Adams. It might contain information about him such as his age, wage, address and family;

ACME Employee Record Sheet

Name: Peter John Adams
Age: 45
Wage: \$21,345
Address: 314 Main Street Jonesville
Married: Yes
Children: 2.

Another file, called "Additional Expenditure" could contain entirely different information;

Dear Sir,

In reference to our telephone discussion on the 12/2 we wish to advise that the proposal for the additions to your manufacturing facility has been approved and work may commence at any time.

Yours Faithfully,

John R. Smith.

We could store these two files on the computer in areas of the computer's diskette memory. To make things simple, we call these areas "files".

Unlike a piece of paper, a computer file is very efficient in terms of the way that it stores data. If the computer used the symbols a-z and 1-9 to represent the same letters and numbers that we use, as well as the symbol '\ ' to signify the start of a new line and '*' to signify the end of the file, the computer would store the letter shown above as the following sequence of symbols;

Dear Sir, \ In Reference to our telephone discussion\
on the 12/2 we wish to advise that the proposal for\
the additions to your manufacturing facility has\
been approved and work may commence at any time.\
Yours Faithfull y, \
John R. Smith.*

Now, given the right program, the computer could take this file and produce a letter that looks very much like the original. The program would have to understand that the '\ ' symbol means that it has to start a new line, and the '*' symbol signifies the end of the file.

In practice, files are a little more complicated than this. This need not concern you because you should never need to deal with files in their "raw" form.

A diskette is very much like a small filing cabinet. It contains a lot of small files. Each of these files may contain letters to various people, information about certain things and numbers and data pertaining to some particular topic.

All of these files can be read and understood by us humans when the computer uses an appropriate program to list them.

However, there is a completely different class of file. These files are complete nonsense as far as the average human is concerned. These files are the programs that the computer runs.

Programs are put into files so that they are easy to manipulate. When you become more experienced with your computer, you will discover that you need to perform several elementary operations with files; copy them, delete them and change their names. When performing these operations, it is convenient to deal with programs as files.

How do we distinguish between the two types of file?

Well, files have names, just like the employee record that we saw before had the name "P.J. Adams". We set aside a part of the name to specify what kind of file it is. A file name looks like this;

ADAMS .REC

Filenames are split into two parts. The first is the "name" of the file. In our example, this is "ADAMS". The second part of the name is called the "file type". In this case, the file is a "record", so a good file type to use is "REC".

There are a number of common file types that you should be familiar with;

- .COM A "COMmand" file - a program.
- .DOC A "DOCument" file - produced by a word processor.
- .SYS A "SYStem" file - with data used by programs.
- .OVR An "OVerlay" file - a special program file.
- .BAS A "BASic" file - containing a program written in the Basic language.
- .MWB A "MicroWorld Basic" program.
- .TEL A "Telcom" related file.
- .HLP A "Help" file for some program.

Some filenames may not have a filetype at all, for example "FRED". In this case, the "." does not have to be typed in.

There are quite a few other file types that you may encounter later.

Here are some important things to remember about file names;

You can use letters, numbers and some special characters (such as '-' and '/') in a file name. However, it is best to stick to just letters and numbers.

All the letters in a file name are in upper case. (Most of the time, you can type names into the computer in either upper or lower case - the computer automatically converts to upper case for you.)

The two parts of a file name are separated by a '.'.

You can use numbers in file names.

The first part of a file name can be from 1 to 8 characters long. It is normal practice to start a filename with a letter.

The second part of a file name can be up to 3 characters long.

File References.

Because you normally use more than one diskette in your computer at a time, two problems arise;

If you want to list a file, how does the computer know which diskette to look on for that file?

If files with the same name exist on two diskettes, how does the computer know which one to pick?

We have a fairly simple way to fix this problem. When we specify the name of a file, we can put the name of the diskette that the file is on in front of the name of the file.

For instance,

ADAMS.REC

could be referred to as

A:ADAMS.REC

if the file is on the diskette in Drive A, or as

B:ADAMS.REC

if it is on the diskette in drive B.

We call a name like "B:ADAMS.REC" a "File Reference".

The Default Drive.

We can specify unambiguously which diskette the file we want is on by putting the drive name, followed by a colon, in front of the name of the file.

However, it is permissible (and usually convenient) to leave the drive name off the file reference.

The computer uses what we call a "default drive" to decide which disk is to be searched for files if a drive name is not specifically used in the file reference. The default drive is sometimes termed the "logged drive".

When you turn the computer on, Drive A is the default drive. So, if you type the file name

FREDDO.FRG

just after the computer has been turned on, then the computer will assume that you mean

A:FREDDO.FRG

It is possible (we will find out how later) to make Drive B the default drive. If you did this, then typing

FREDDO.FRG

will make the computer assume that you mean

B:FREDDO.FRG

User Areas.

We have already likened a diskette to a filing cabinet. Let us carry this analogy just a little further to explain the concept of user areas.

Consider one drawer of a filing cabinet. You may have, say, 200 files in it. If they are random mix of all sorts of different subjects or dates, then it would be helpful to divide the files into related groups. This would help you find any particular file more quickly.

For instance, a small company might divide its records up like this;

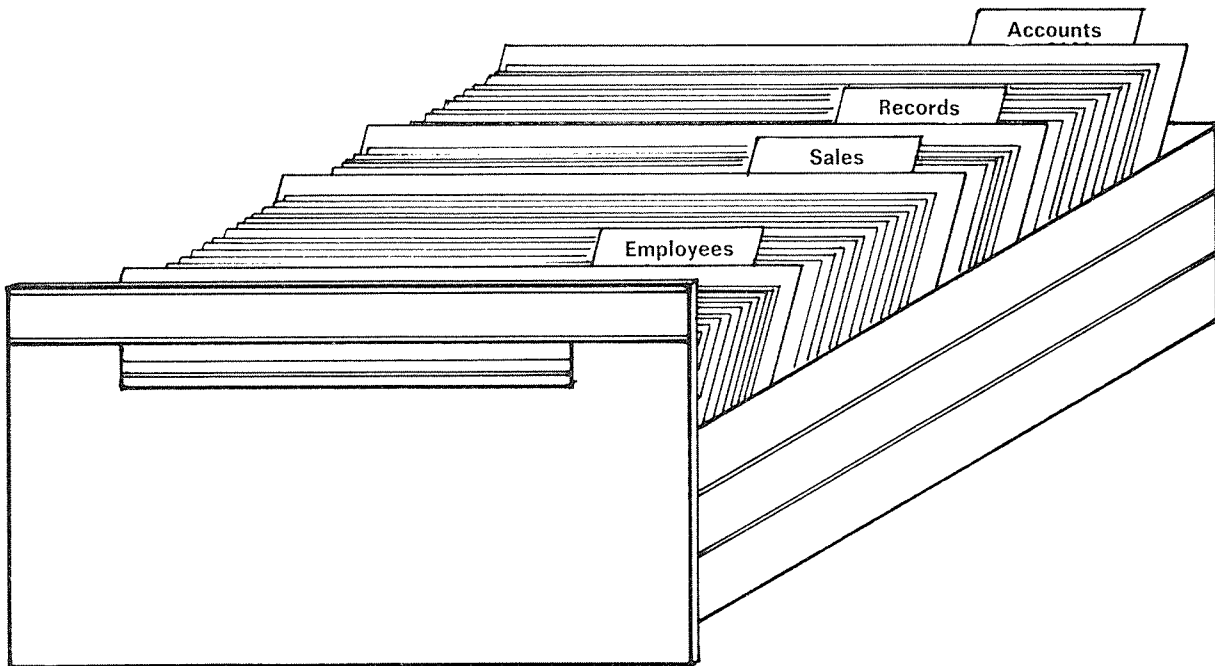


Diagram 1.29 - Partitioning.

Just like a filing cabinet drawer, a diskette has a fixed amount of space available. That space may be partitioned off into a number of areas. Although the size of the diskette (drawer) remains constant, the size of these areas (groups of folders) can change to occupy as much as all or as little as none of the diskette (drawer).

With diskettes, we call these areas "User Areas". This is a historical term, from the days when a number of different users would use the same diskettes on the computer. Each user would have his or her own area to work with.

However, you can use these user areas to partition your work into logical groups. There are 16 user areas available to you, numbered 0 to 15.

Section 8 - The Shell.

When you first switch your computer on and insert a diskette, the screen fills with information and pictures. The program that puts this information on the screen is called the "Shell".

The Shell acts as an interface between you and the internal workings of the computer. We can visualise this with the following diagram;

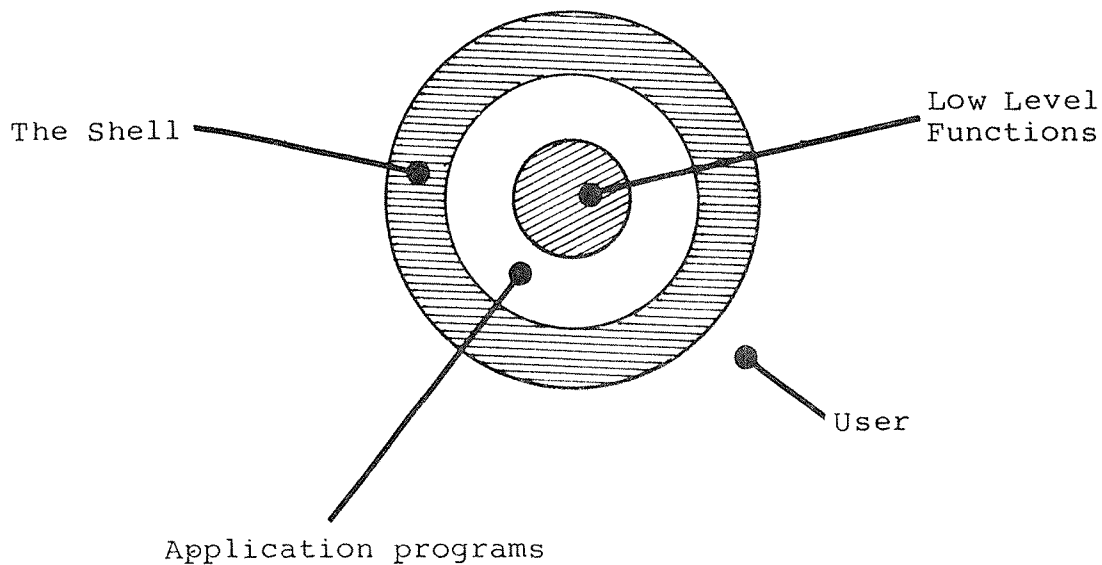


Diagram 1.30 - The Shell.

In the MicroBee, the shell is called the "B-Shell". The shell interprets your commands.

In this and the next few sections we will discuss how the shell is used.

Let's begin by examining the initial screen of the Shell;

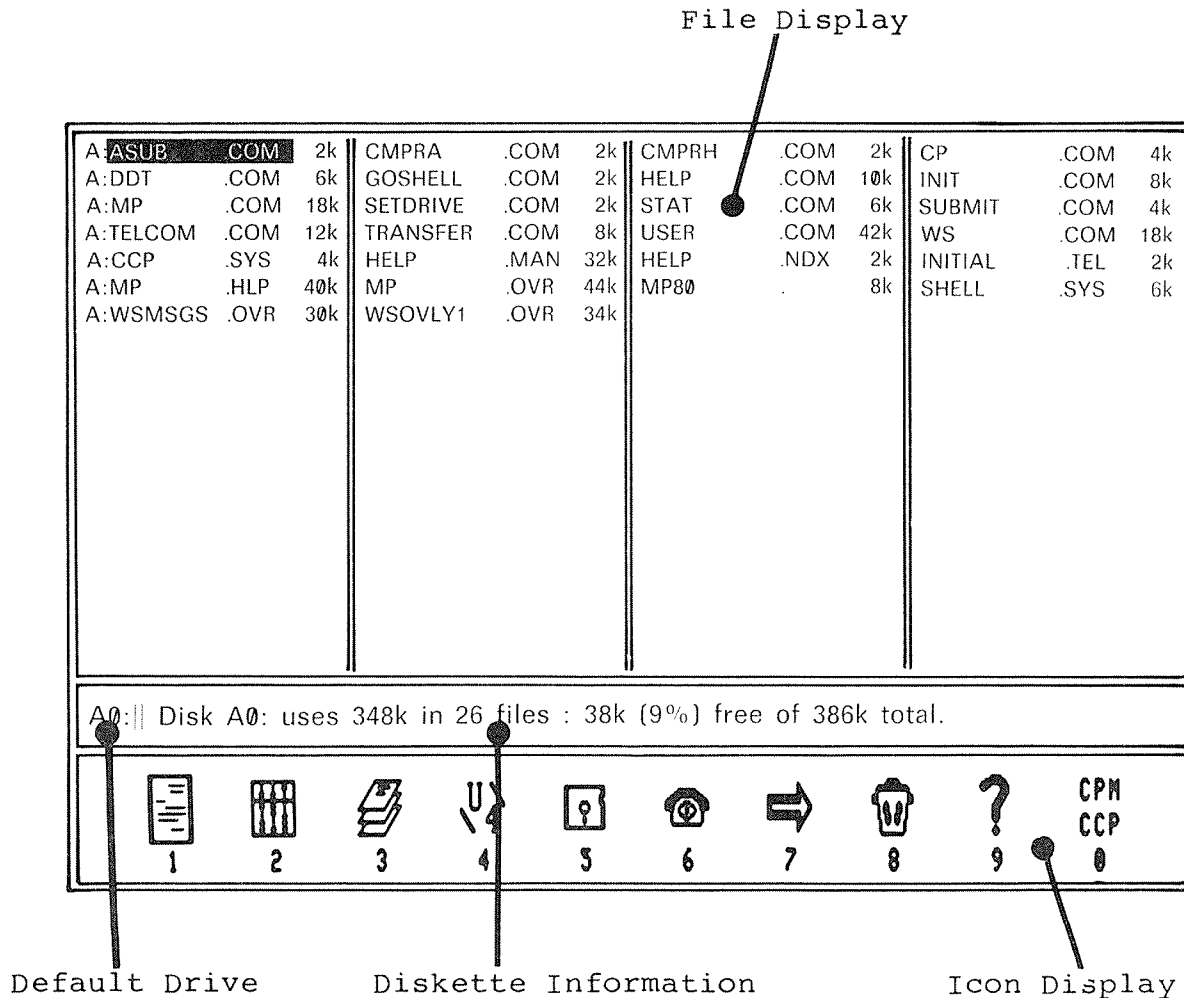


Diagram 1.31 - The Shell Display.

The screen is divided into these three main areas;

The FILE DISPLAY shows you what files are on the diskette that you are currently using.

The DEFAULT DISK shows which drive is currently the default drive.

The DISKETTE INFORMATION tells you about the diskette you are currently looking at.

The ICON DISPLAY shows you programs you can run by hitting a single number key.

The File Display.

This part of the Shell's screen shows you what files are on your diskette. In the diagram above, some of the files on the diskette are TRANSFER.COM, TELCOM.COM, and SHELL.SYS. We call the complete list of files the "Directory" of the diskette. One file is covered in a white block. This block is called the "File Cursor", and we will see later how to move it about the screen to make typing commands easier.

You may have noticed that the files in the directory are split into two groups - ".COM" files, and other files. Each group is sorted alphabetically.

Beside each file name, you will see a number. This is the length of that file. The length is specified in terms of the number of "Kilobytes" that the file occupies. A kilobyte is about 1000 characters - a convenient unit to use.

Directory

Drive	File Names	File Sizes
A:	ASUB .COM 2k	CMPRA .COM 2k
A:	DDT .COM 6k	GOSHELL .COM 2k
A:	MP .COM 18k	SETDRIVE .COM 2k
A:	TELCOM .COM 12k	TRANSFER .COM 8k
A:	CCP .SYS 4k	HELP .MAN 32k
A:	MP .HLP 40k	MP .OVR 44k
A:	WSMSG .OVR 30k	WSOVLY1 .OVR 34k
		CMPRH .COM 2k
		HELP .COM 10k
		INIT .COM 8k
		STAT .COM 6k
		SUBMIT .COM 4k
		USER .COM 42k
		WS .COM 18k
		HELP .NDX 2k
		INITIAL .TEL 2k
		MP80 . 8k
		SHELL .SYS 6k

Diagram 1.32 - The Directory.

Along the left hand edge of the screen, you will see the symbols "A:" in front of the file names. This indicates that the file directory that you are looking at is for the diskette in Drive A.

The Default Disk Display.

We have already discussed the two concepts of the "default drive" and "user areas."

The "default drive display" shows you both which disk is currently the default one, and also which user area is currently in use.

In Diagram 1.26, the default drive is A and the user area in use is 0.

The Diskette Information.

The "Diskette Display" area of the shell's display tells you some important information about the diskette that you are looking at. It is important to note that the drive you are looking at is NOT always the default drive.

The "Drive/User" name tells you which drive and which user area you are looking at.

The "Usage" data tells you how much of the available disk space has been used.

The "Free Space" data tells you how much of the available space on the diskette remains unused.

The "Size" data tells you how much space the diskette has in total.

All of the above data is given in terms of 'k'. You may remember that a 'k' is about 1000 characters, a convenient unit to use when referring to data storage.

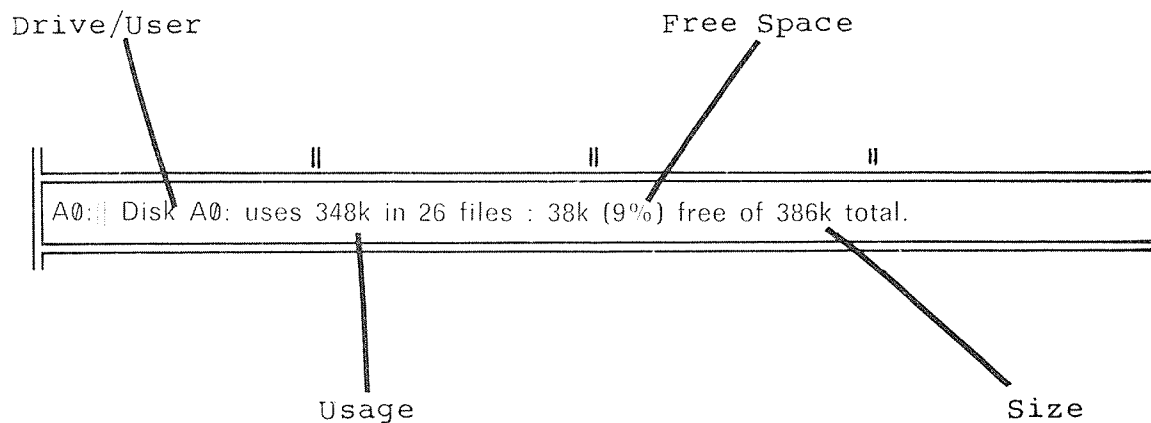


Diagram 1.33 - Diskette Information.

The Icon Display.

Along the bottom of the screen, you will have noticed a number of pictures. Each of these pictures has a number underneath it. If you hit the key corresponding to that number (0..9), then a program corresponding to that picture will be run.

We call these pictures ICONs. The pictures help you to remember what each key does.

For instance, Icon 1 looks like a printed letter. The program that runs when you hit the '1' key is the word processor (used, amongst other things, to write letters).

We will be discussing each of the "Iconic" (to coin a phrase) programs throughout the remainder of this chapter.

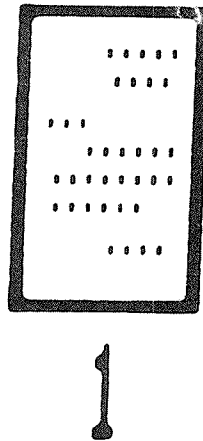


Diagram 1.34 - Icon 1 - The Word Processor.

Section 9 - Some Simple Commands.

Ensure that the copy that you made of the Master Diskette is in Drive A. You should also put a write protect tab on the disk if you have not already done so. Reset the computer and wait until the Shell's display appears.

Now hit the 'l' key. What happens?

With any luck, WordStar (the MicroBee's word processing program) should run. After a few seconds, several screens will appear in succession.

(When you run WordStar later, you can speed up these initial screens by hitting the space bar.)

If you don't get the WordStar screens, but the error message "WS NOT FOUND" showing above the Icons instead, then WordStar is not on your Master diskette. Take your "WordStar Master Diskette" and use this instead of your System Master. (Of course, you must make a backup copy of the diskette first!)

A:ASUB	.COM	2k	CMPRA	.COM	2k	CMPRH	.COM	2k	CP	.COM	4k
A:DDT	.COM	6k	GOSHELL	.COM	2k	HELP	.COM	10k	INIT	.COM	8k
A:MP	.COM	18k	NOT-WS	.COM	18k	SETDRIVE	.COM	2k	STAI	.COM	6k
A:SUBMIT	.COM	4k	TELCOM	.COM	12k	TRANSFER	.COM	8k	USER	.COM	42k
A:CCP	.SYS	4k	HELP	.MAN	32k	HELP	.NDX	2k	INITIAL	.TEL	2k
A:MP	.HLP	40k	MP	.OVR	44k	MP80	.	8k	SHELL	.SYS	6k
A:WSMSG	.OVR	30k	WSOVLY1	.OVR	34k						

A0: Disk A0: uses 348k in 26 files : 38k (9%) free of 386k total.

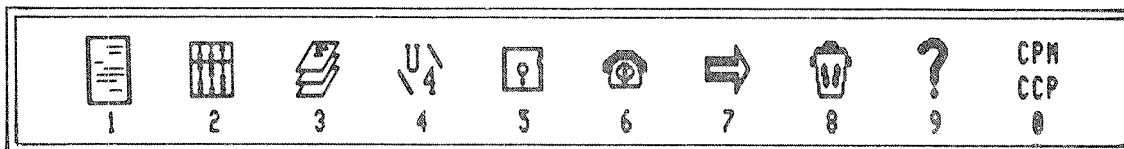
WS NOT FOUND

									CPH CCP 0
1	2	3	4	5	6	7	8	9	

Diagram 1.36 - "WS NOT FOUND" Error Message.

If you like, you can take the "WordStar Training Guide" and learn how to use WordStar. However, we will be saying more about WordStar later, so we suggest that you wait a little while.

When the WordStar main menu is on the screen, you can exit back to the Shell by hitting the 'X' (for exit) key. After a few seconds, the Icons will appear at the top of the screen like this;



H Set help level : :
---Commands to open a file--- : E RENAME a file : -WordStar Options-
D Open a document file : O COPY a file : M Run MailMerge
N Open a non-document file : Y DELETE a file : S Run SpellStar

directory of disk A:
HELP.MAN HELP.NDX INITIAL.TEL MP.HLP MP80

Diagram 1.37 - Returning to the Shell from a Program.

When a program ends and the computer returns to the Shell, the Shell leaves the majority of the screen intact so that you can read what the last program that ran left on the screen. This is especially useful with some programs that we will look at later.

When the Icons re-appear on the screen, you can do one of two things.

Firstly, hitting the space bar will bring back the normal Shell display.

Alternately, you can hit a number key (0-9) to run a Icon program as normal.

Let's use another Icon program - HELP. HELP lets you access the on-line help function.

What is on-line help?

Very simply, on-line help is parts of this and other manuals stored on the computer's diskettes. When you want to, you can run the program called "HELP" which lets you read these extracts in a convenient manner.

With the Icon display on the screen, hit the '9' key to run HELP. When you do this, the screen should appear as shown below.

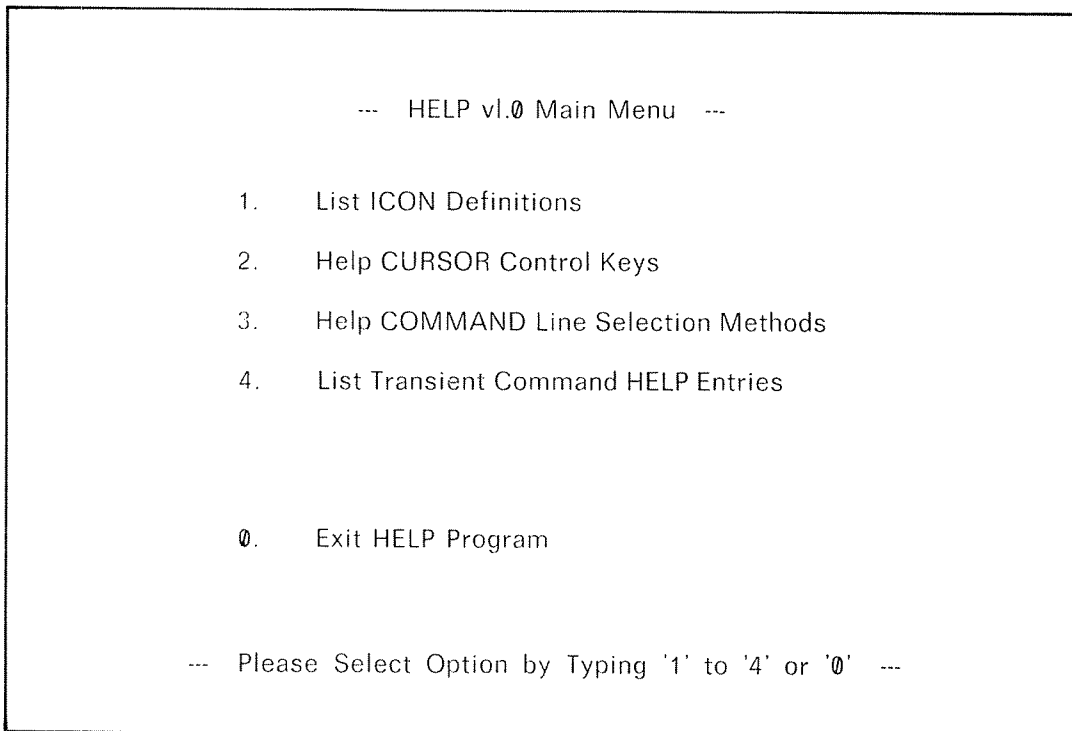


Diagram 1.38 - The HELP Menu.

When the HELP menu appears, you can hit a number key to give you information about any particular topic. Try the '2' key, and read any information that appears on the screen.

You can experiment with HELP some more if you like, but we will explain it in detail later.

You might also like to experiment with the other Icons. Before you do, put a write protect tab on your diskette in case you accidentally type a harmful command. Remember that when a diskette has a write protect tab on it, it cannot be written on. This means that the files on the disk cannot be removed or altered.

We will be discussing each of the application programs in detail shortly.

We have seen one way to run programs with the Shell. This is simplicity itself. Alas, to make matters complex, there are two other ways in which commands can be entered.

The first of these involves the use of the "File Cursor". You might remember that the file cursor is the white block over the file at the top, left of the screen.

You can move the cursor over any file on the screen. If you move the cursor over the name of a program file that you want to run, and then hit the <RETURN> key, the program will be run. This is convenient for programs which can not be run using the Icons.

A number of keys are used to move the file cursor. The keys are arranged in a diamond shape so that it is easy to remember which keys do what. They are shown in the diagram below;

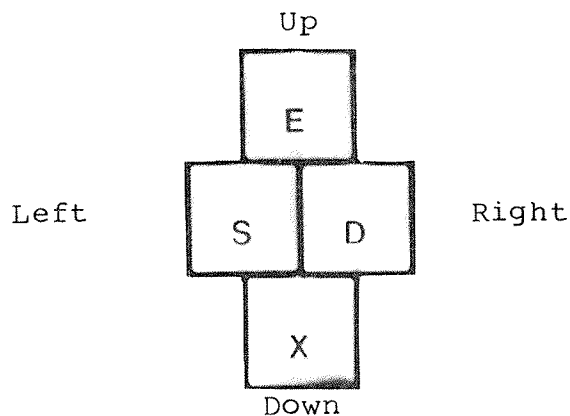


Diagram 1.39 - Cursor Keys.

To move the file cursor in any direction, hold the control key down, then hit the desired key. Experiment with this.

To make life a little simpler, you can move the file cursor to the last file in the directory by hitting ^Z. Hitting ^W will move you to the top of the display.

Try moving the cursor around the screen. Find a file which does not have a ".COM" extension (ending) and then hit the <RETURN> key. What happens?

Hopefully, you will get an error message above the Icons as shown below.

A:ASUB	.COM	2k	CMPRA	.COM	2k	CMPRH	.COM	2k	CP	.COM	4k
A:DDT	.COM	6k	GOSHELL	.COM	2k	HELP	.COM	10k	INIT	.COM	8k
A:MP	.COM	18k	SETDRIVE	.COM	2k	STAT	.COM	6k	SUBMIT	.COM	4k
A:TELCOM	.COM	12k	TRANSFER	.COM	8k	USER	.COM	42k	WS	.COM	18k
A:CCP	.SYS	4k	HELP	.MAN	32k	HELP	.NDX	2k	INITIAL	.TEL	2k
A:MP	.HLP	40k	MP	.OVR	44k	MP80		8k	SHELL	.SYS	6k
A:WSMSG	.OVR	30k	WSOVLY1	.OVR	34k						

A0: Disk A0: uses 348k in 26 files : 38k (9%) free of 386k total.

NOT A COMMAND FILE

									CPM CCP
1	2	3	4	5	6	7	8	9	0

Diagram 1.40 - Attempt to Run a Non ".COM" File Error.

Now, move the file cursor over a file which does have a ".COM" extension. Hit the <RETURN> key. With any luck, the program that you left the cursor over should run.

For instance, if the cursor was over the file STAT.COM, then the STAT program would have run.

So far, we have seen two ways of running programs; by means of the Icons, and by using the file cursor. However, as we said before, there are three ways to run programs, so we will discuss the last way now.

Make sure that the Shell is running and the Icons are showing on the screen. Now hit the 'W' key. What happens? The Icons will disappear and the letter 'W' should appear on the screen where the Icons were. Now type 'S'. The letter 'S' will appear next to 'W'.

A:ASUB	.COM	2k	CMPRA	.COM	2k	CMPRH	.COM	2k	CP	.COM	4k
A:DDT	.COM	6k	GOSHELL	.COM	2k	HELP	.COM	10k	INIT	.COM	8k
A:MP	.COM	18k	SETDRIVE	.COM	2k	STAT	.COM	6k	SUBMIT	.COM	4k
A:TELCOM	.COM	12k	TRANSFER	.COM	8k	USER	.COM	42k	WS	.COM	18k
A:CCP	.SYS	4k	HELP	.MAN	32k	HELP	.NDX	2k	INITIAL	.TEL	2k
A:MP	.HLP	40k	MP	.OVR	44k	MP80	.	8k	SHELL	.SYS	6k
A:WSMSG	.OVR	30k	WSOVLY1	.OVR	34k						
A0: Disk A0: uses 348k in 26 files : 38k (9%) free of 386k total.											
ws											

Diagram 1.41 - Typing a Direct Command.

Now hit the <RETURN> key. If your diskette has WS.COM (WordStar) on it, then WordStar will run. If your diskette doesn't have WordStar, then you will see an error message appear above the Icons.

Sometimes you have to type a command in this way, actually typing in the name of the program. One instance is when you run a program such as CP. CP is a program that copies files from one diskette to another. To copy the file TOM.DOC on the diskette in Drive A to the diskette in Drive B, you would type the command "CP TOM.DOC B:".

Using the Icons, there is no way that you could enter anything other than the "CP" part. So, we have to type the entire command. But to make life easier, the Shell helps us out a little. Get the Icon display on the screen, and position the file cursor over a ".COM" file. Hit LINE FEED. What happens?

A:ASUB .COM 2k	CMPRA .COM 2k	CMPRH .COM 2k	CP .COM 4k
A:DDT .COM 6k	GOSHELL .COM 2k	HELP .COM 10k	INIT .COM 8k
A:MP .COM 18k	SETDRIVE .COM 2k	STAT .COM 6k	SUBMIT .COM 4k
A:TELCOM .COM 12k	TRANSFER .COM 8k	USER .COM 42k	WS .COM 18k
A:CCP .SYS 4k	HELP .MAN 32k	HELP .NDX 2k	INITIAL .TEL 2k
A:MP .HLP 40k	MP .OVR 44k	MP80 . 8k	SHELL .SYS 6k
A:WSMSG .OVR 30k	WSOVLY1 .OVR 34k		

A0: Disk A0: uses 348k in 26 files : 38k (9%) free of 386k total.

TRANSFER█

Diagram 1.42 - Using LINE FEED to Copy File Names.

You can move the file cursor around to copy any number of file names onto the command line. Experiment with this.

Using the file cursor, you can avoid having to type a lot of file names.

So far, we have only used one disk drive - Drive A. We will now see how to access the other drives in the system.

Before we can do this, however, we must have a properly initialised diskette to work with. Type '5' to invoke INIT, and then '2' to select drive B for the initialisation. Now place a fresh diskette into drive B, and press <RETURN>. When the initialisation is complete, press '0' to exit from the INIT program.

Hold the "CONTRoL" key on the keyboard down and then hit the 'C' key. Now release the CTRL key.

After a second or two you will notice the screen change. You are now looking at the directory of the diskette that you put in Drive B. Check the drive name along the left hand edge of the screen. The display will look something like the one below;

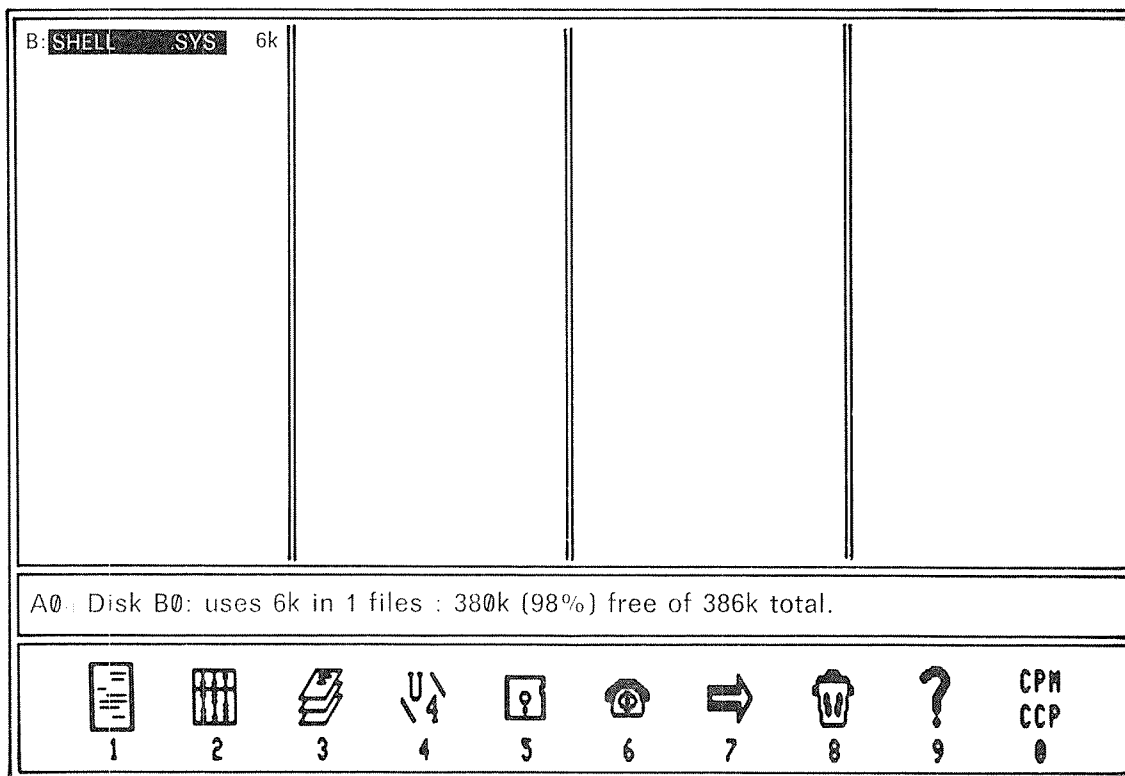


Diagram 1.43 - Directory of Drive B.

Now, what happens if type control-R (^R) ?

Hitting ^R shows you the directory of Drive A again.

Display the directory of Drive A again. What happens if you now hit ^C twice?

One hit and you see Drive B.

Another hit and you see Drive M.

Drive M? Drive M is not really a disk drive. Rather, it is an area of memory that is set aside to act like a very fast disk drive. We will discuss Drive M (the Memory Drive) later.

What happens if you now hit ^C again? You will see a message appear at the top of the screen.

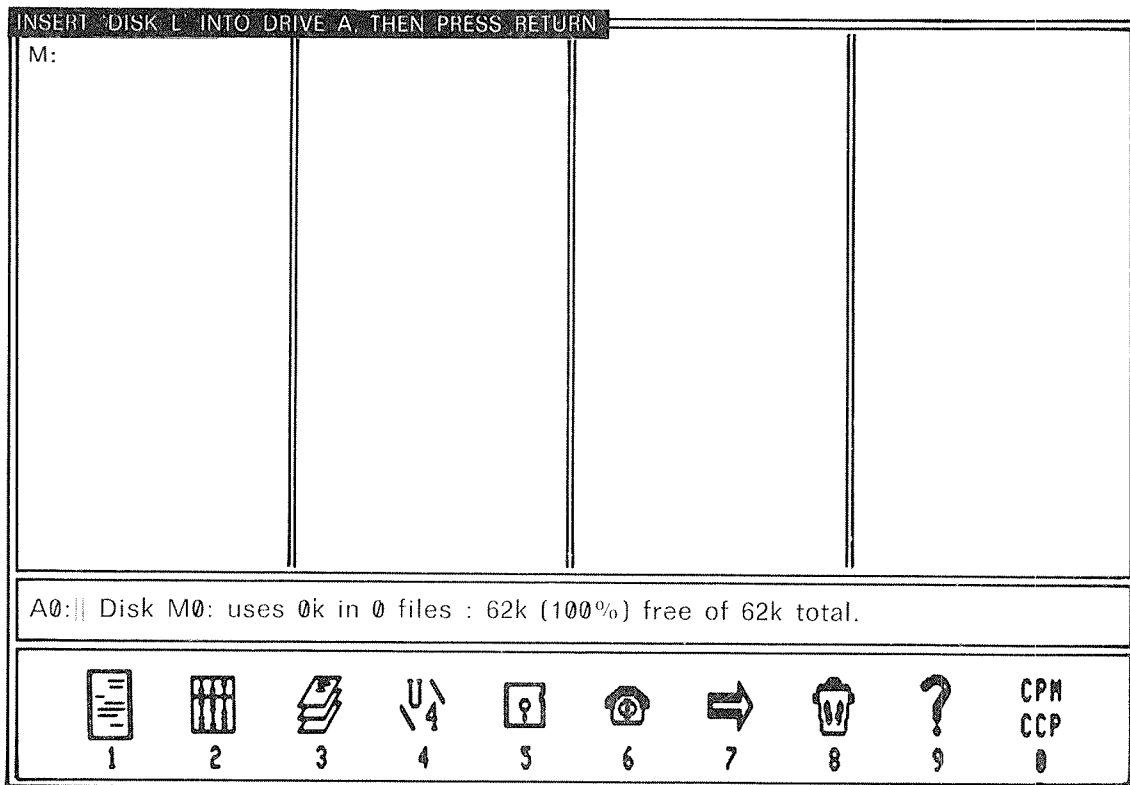


Diagram 1.44 - Logical Drive Selection.

When this message appears, just hit the <RETURN> key. You will now see the directory of Drive L. Drive L is another pseudo-drive, called the Logical Drive. Again, we will discuss this later.

Of course, hitting ^R a number of times will return you to the directory of Drive A (you will have to press <RETURN> here). The diagram below shows in a clearer fashion just how the directory switching keys work.

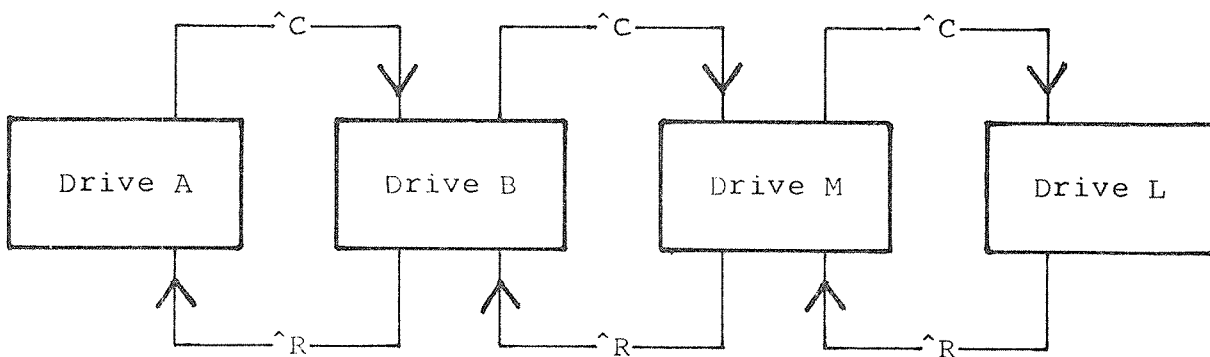


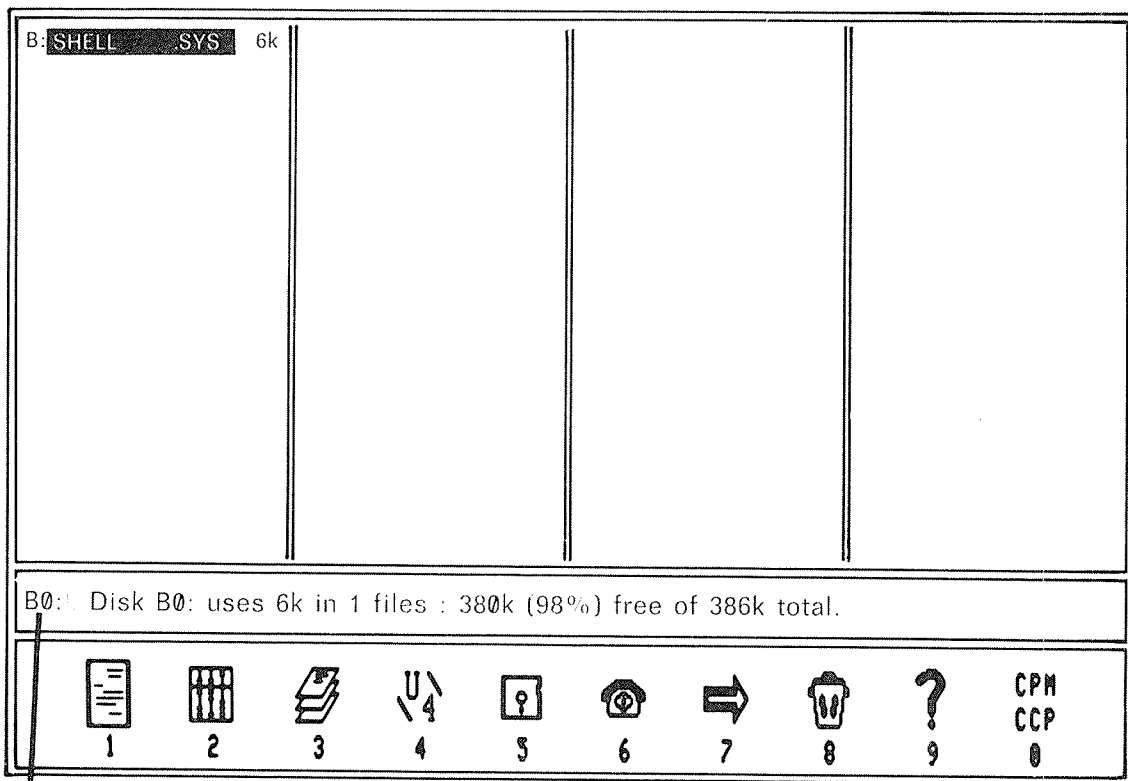
Diagram 1.45 - Directory Switching.

Now you know how to see the directories of diskettes in the various drives connected to your computer. Let's now see how to change the default drive.

The current default drive is probably drive A. Let's set Drive B as the default.

Make sure that you have a diskette in Drive B. Hit the 'B' key, the ':' key, and then hit RETURN. As you type this command, you will see the Icons disappear and the characters that you type will appear instead.

If you typed things correctly, then the "default drive" display will have changed to show "B0:".



Default
Drive

Diagram 1.46- Changing the Default Drive to B.

Section 10 - Disk Buffering and the M Drive.

We have already encountered Drive M and Drive L. Let's now discuss what these drives are and what they are useful for.

Most 8-bit computers can only use 64k of memory. However, using a special technique, it is possible to use more memory than this by turning off one bank of memory and using another in its place. This technique is called "Bank Switching" and it is used in the 128k MicroBee to allow an extra 64k of memory to be accessed by the machine.

In the 128k MicroBee, we keep one quarter of the memory fixed in the same spot all the time, and turn on and off the remaining memory in three banks. This concept is shown below.

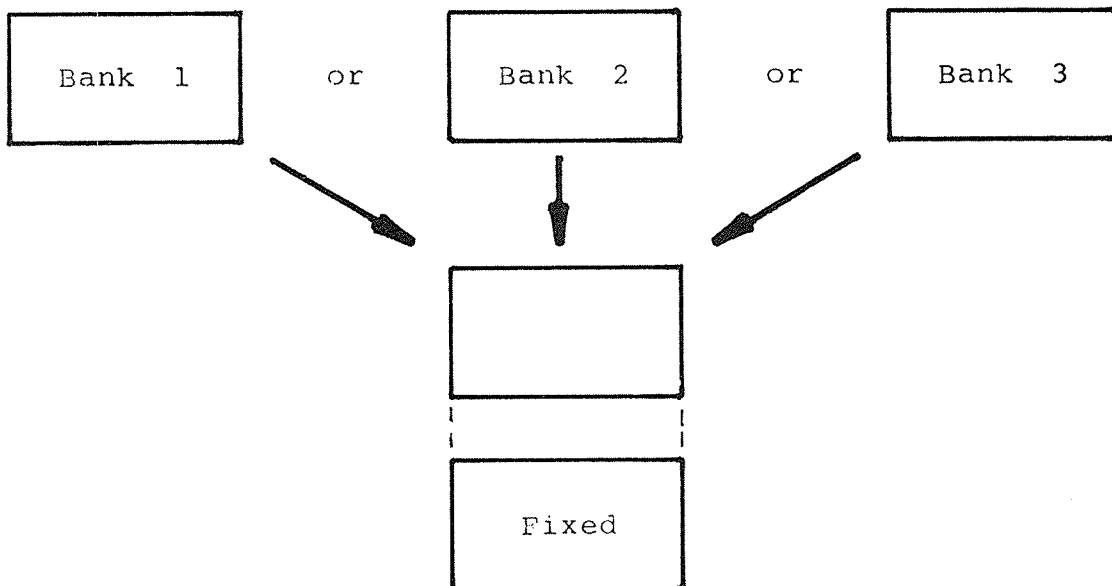


Diagram 1.47 - Bank Switching.

Normally, Bank 0 is "switched in", and programs such as WordStar run without any knowledge that the other 64K of memory exists.

The special piece of software that deals with getting data onto and off diskettes uses the other two banks of memory in two ways - the M Drive and "Disk Buffering".

Disk buffering is the technique of storing commonly used bits of data from the diskette in the memory of the computer. Because we have 64k of extra memory in our computer, we can theoretically store 64k of data from the disks in this memory.

How does disk buffering work? Very simply, and quite often without you even knowing that it is happening. Only people who have used other computers will notice the effects of this buffering, since the computer can run many times faster than other computers under certain circumstances.

Put simply, when a program wants some data from a disk, then it is given that data. However, the same data is also stored in memory at the same time. Now, if that program wants that same data back again, then the data comes from memory instead of disk.

The advantage of this is that it is very much faster getting data from memory than from disk. So, your computer appears to run faster.

We said that "theoretically", 64k of memory was available for disk buffering. However, this 64k has some other demands placed upon it.

For a start, a little of the memory is used to store some of the data that controls the data transfers to and from diskettes.

At the same time, as little as none or as much as all of the remaining 62k of memory can be used as the "Memory Drive".

We have already said that it is very much faster getting data from memory than from disk. Obviously, if we could get a part of memory to look like a disk drive, then the computer would operate a lot faster.

In fact, this is just what the M Drive (or Memory Drive) is - simply a part of our extra 64k of memory that can be used to look like a disk drive.

How do you use the M Drive? Simply by copying a file into it. You can copy a file to the M Drive, edit it using WordStar much more quickly than usual, and then copy the file back to your normal disk.

What determines the M Drive size? It can't be bigger than 62k, but it can be as small as nothing. The M Drive grows according to the size of the files that you keep in it. The remainder of memory is used by the disk buffer.

What happens when you reset the computer? None of the files in the M drive are lost. However, they are lost if you switch the computer off. So, you must always remember to copy your files back onto a physical disk before you turn the computer off.

In fact, it is a good idea to copy your files onto a physical diskette at regular intervals, so that if there is a power failure or something equally drastic, you don't lose your files.

The diagram below shows the dynamic nature of the second 64k of memory. In (a), the M drive contains no files and hence the disk buffer occupies most of the space.

In (b), a 16k file is copied into the M Drive and hence the disk buffer only occupies $62 - 16 = 46k$.

In (c), another file, 35k long is copied to the M drive and the size of the disk buffer is reduced again to 11k.

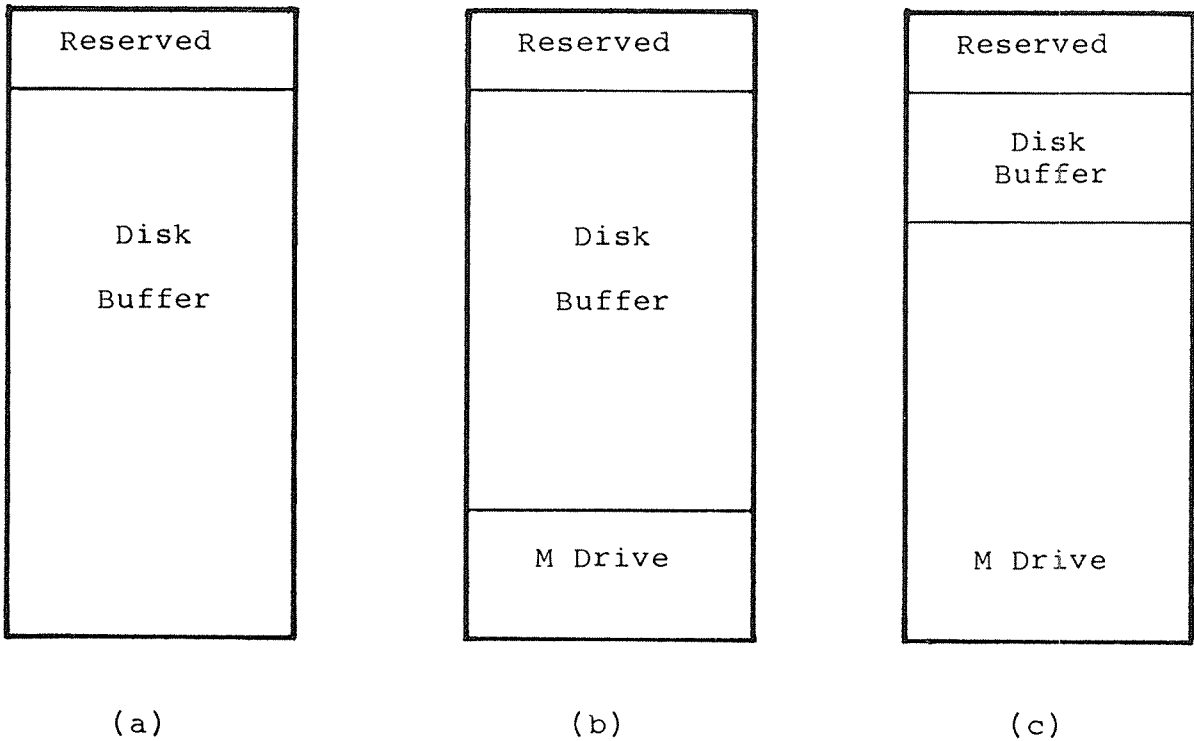


Diagram 1.48 - Use of the Buffer/M Drive Memory.

Section 11 - Drive L.

Drive L is not a physical drive like Drive A or Drive B. Rather, it is a "Logical Drive", hence the name "L Drive".

In some situations, you will find that it would have been convenient to have three disk drives on your computer. With the L Drive, the computer simulates this third drive by asking you to swap two diskettes in drive A.

For instance, you may have three diskettes - "master", "work" and "backup". You want to use a program on the "master" diskette to copy a file from the "work" diskette to the "backup" diskette.

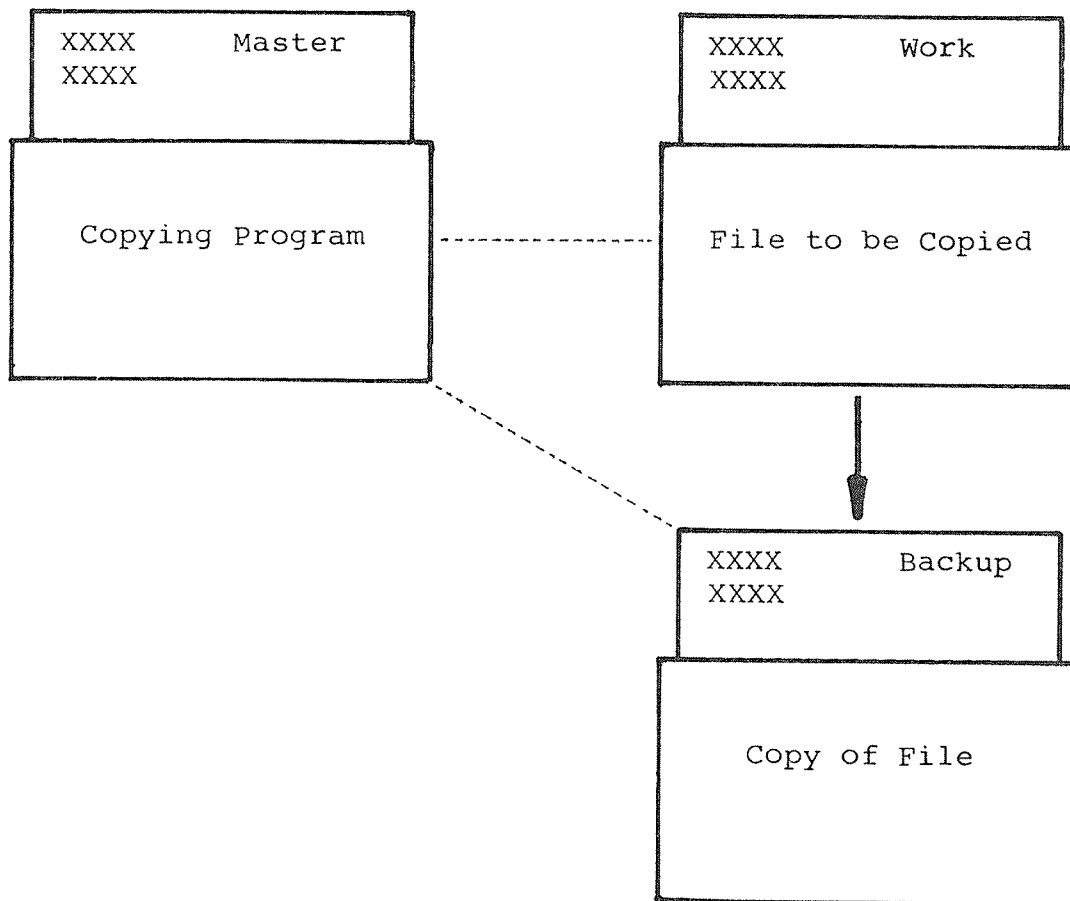


Diagram 1.49 - Three - Disk Copying.

To do this using the L Drive, you would put your master diskette in Drive A and your "work" diskette in Drive B. Having done this, you would type the necessary command to copy the file from Drive B (with the "work" diskette) to Drive L (the "backup" diskette).

After issuing the command, the program will read the file off Drive B, and when the program wants to write some of the file onto the "Backup" diskette, you will see a message appear at the top, left of the screen.

When this message appears, take the Master Diskette out of Drive A and put your "Backup" disk in Drive A instead. Then hit <RETURN>.

INSERT DISK L INTO DRIVE A THEN PRESS RETURN

Diagram 1.50 - Logical Drive Switching.

The copying program will write the file onto your "backup" diskette.

When the program has finished, it will return control to the Shell, and you will see another message appear at the top of the screen. This time, take your "Backup" disk out of Drive A and insert the "Master" disk instead.

Using Drive L is really very simple - just follow the instructions that appear at the top of the screen.

Section 12 - Changing Diskettes.

Quite often, you need to change the diskette in a disk drive. When this need arises, you can not simply take the diskette out of the drive and then put a new diskette in. If you did this, then the computer would not know that you have changed the diskette.

To change a diskette when you are in the Shell (when the Shell display is on the screen), simply remove the original diskette from the drive and then put the new one in. After this, type "A:" and <RETURN> (if you changed the diskette in Drive A) or "B:" and <RETURN> (if you changed the diskette in Drive B).

This process is necessary because the computer stores some information from each diskette in memory. Typing "A:" or "B:" causes the computer to forget this information and read it from the diskette. So, if you change the diskette, and then type "A:" or "B:", then the computer will read the information from the new diskette.

Section 13 - Configuring the system.

Each owner of a MicroBee 128K Computer may have a different monitor and printer to other owners of the system. To enable each user to set up the software for the needs of his or her system, we provide a configuration program.

The configuration program is actually part of "INIT" - the program that you use to initialise a diskette before data is written on it.

Run INIT by using icon 5. The screen should appear as shown in Diagram 1.24. Once the screen appears, hit the '5' key. This brings up the "Configuration Screen".

From this screen, you can select any of 6 different things to configure;

- 1 - Screen Positioning. This sets the position of the display on your monitor.
- 2 - Screen Colours. This allows you to change the colours used on the screen (if you have a colour MicroBee).
- 3 - Printer Configuration. This sets up which printer the computer uses - serial or parallel. A number of relevant items are also set up using this option.
- 4 - Drive Selection. This sets certain parameters relating to the disk drives.
- 5 - Shell Selection. This selects the "default shell". Normally, this is B-Shell. However, people who are more familiar with the normal CP/M shell may set the default shell to the normal CP/M shell.
- 6 - Default Options for Programs. This allows you to set up certain options for the main utility programs.

Another option, option 7, allows you to save the changes that you make onto the diskette in Drive A. If you do not use this option, then the configuration changes that you make will only be made in the copy of the software in memory. Remember to use this option if you want to save the changes on diskette.

Let's discuss each of the options in turn.

1. Screen Positioning.

If the display on your monitor is not in the middle of the screen, then use this option to move the display to the desired position.

From the main configuration menu, hit the '1' key. The instructions for moving the display will show on the screen. Press the keys as shown until the entire border around the display can be seen, and then hit <RETURN> to go back to the configuration screen.

2. Screen Colours.

To select this option, hit the '2' key from the main configuration screen. Hitting a letter key (A..Z) selects different colours for the characters on the screen, while hitting 1..8 selects different background colours. Choose these colours according to taste. Hit <RETURN> to return to the main screen.

3. Printer Configuration.

There are a number of choices that you have to make when configuring the printer software for your computer.

Do you have a "parallel" or a "serial" printer?

If you have a parallel printer;

Do "LINE FEEDS" need to be sent?

If you have a serial printer;

Do "LINE FEEDS" need to be sent?

What baud rate is the printer set for?

Is the printer set to use "XON/XOFF protocol"?

Most printers allow you to set all of these parameters. If this is the case with your printer (consult the manual for the printer), then the best way to set up your printer is;

Set AUTOMATIC LINEFEED off.
- the computer should then send LINEFEEDS

Do not use XON/XOFF protocol (for serial printers only).
- a hardware signal on the CTS line is preferable

Use a baud rate of 1200.

Having determined the parameters for your printer, select the appropriate options and then hit <RETURN> to return to the main configuration screen.

If you have a standard MicroBee printer, then the printer selections will be already preset to the correct values, and should not be altered.

4. Drive Selection.

Normally, you should not need to alter this selection. However, if necessary, you can change the number of disk drives that the software "sees" to 1,2,3 or 4.

Select the option by hitting the '4' key. Select the number of drives by hitting a number key - 1..4. Return to the main configuration menu by hitting <RETURN>.

5. Shell Selection.

To set the operation of the computer when it is turned on, hit the '5' key when the main configuration screen is displayed.

By hitting the number keys (1..4), you can select one of four options;

- 1 - B-Shell operational after RESET or power-on.
- 2 - B-Shell with an automatic command.
- 3 - CP/M CCP operational after RESET or power-on.

In most cases, you would select option 1. This means that B-Shell is operational when you hit RESET or when the machine is switched on.

You can make some program, say WordStar, run automatically by using option '2' and typing in the normal command to run WordStar (WS), followed by <RETURN>.

6. Default Options for Programs.

Some of the B-Shell's companion programs use an "option display" to provide flexibility while not slowing down operations with many consecutive questions.

This selection allows the initial values that these options take to be specified and remembered along with the "system information" that is stored in a special place on the system diskette.

To set the default options for one of the programs listed, press the number corresponding to that program.

For a program such as INIT, the options may now be set just as they are in the actual program - use <SPACE> to place the cursor over the next option, and 'Y' or 'N' to set the state of the option. <RETURN> will return you to the screen listing the programs to set options for.

For programs such as TRANSFER, with many individual functions, you must make a further selection of which function to set the options for. Once this selection is made the options are set in the same way as they are in the individual programs. Again, <RETURN> will always take you back to the screen from which you made the last selection.

Section 14 - Deleting Files.

In the next few sections, we will discuss some common tasks that you will need to perform in the course of using your computer. We will start by describing how to delete files.

There are obviously occasions when you want to get rid of a file on a diskette. How can you do this?

Simple - use Icon 8. Appropriately, this Icon looks like a garbage can.

With the Icon display on the screen, hit the 8 key.

You will be asked which file you wish to delete;

A:ASUB	.COM	2k	CMPRA	.COM	2k	CMPRH	.COM	2k	CP	.COM	4k
A:DDT	.COM	6k	GOSHELL	.COM	2k	HELP	.COM	10k	INIT	.COM	8k
A:MP	.COM	18k	SETDRIVE	.COM	2k	STAT	.COM	6k	SUBMIT	.COM	4k
A:TELCOM	.COM	12k	TRANSFER	.COM	8k	USER	.COM	42k	WS	.COM	18k
A:CCP	.SYS	4k	HELP	.MAN	32k	HELP	.NDX	2k	INITIAL	.TEL	2k
A:MP	.HLP	40k	MP	.OVR	44k	MP80	.	8k	SHELL	.SYS	6k
A:WSMSG	.OVR	30k	WSOVLY1	.OVR	34k						

A0: Disk A0: uses 348k in 26 files : 38k (9%) free of 386k total.

Which file do you wish to delete ? █

Diagram 1.51 - DELETE Screen.

At this point, you can either type in the name of a file, or you can move the file cursor over the name of one file and then hit the <RETURN> key.

After this, you will be asked to confirm the deletion. If you are satisfied with the file name, type 'Y'. If you are not, then type 'N' and you can then try again.

If you make a mistake, then use the <BACK SPACE> key to correct your errors. If you want to abort the delete command, then just hit <ESC>.

This method is fine if you want to delete one file at a time, but there are occasions when you want to delete groups of files, or even all the files on the diskette.

There is a way of doing this. We use special characters in the file reference that you type. We call these "Metacharacters".

We use two metacharacters - '*' and '?'.

The '?' (question mark) can be used to replace any character.

The '*' (asterisk) can replace any number of any characters.

Let's take an example. Suppose we had the following files on a diskette;

NAME.DOC	FAME.DOC
MAME.DOC	TAME.DOC
MARE.DOC	TARE.DOC
NAME.MWB	FAME.MWB

Now, if we use the name "?AME.DOC", then we are referring to the files NAME.DOC, MAME.DOC, FAME.DOC and TAME.DOC.

MA?E.DOC would refer to the files MAME.DOC and MARE.DOC. Wherever the question mark appears, any character at all can appear in the names of the files.

Now, *.MWB would refer to NAME.MWB and FAME.MWB.

NAME.* would refer to NAME.DOC and NAME.MWB.

N*.* would refer to NAME.DOC and NAME.MWB. If an asterisk appears in a file reference, then it can refer to any group of characters.

Some obvious points come to mind. "*.*" means "all the files on the diskette". "*.*" is equivalent to "?????????.???".

.	All files.
N*.*	All files which start with N.
AN*.COM	Any file starting with AN of type .COM
AT.N*	All AT files with an extension starting with N.
N.	Same as *.* because characters after * ignored.
A?T	AAT, ABT, ACT, ANT, ART etc.
?????????.???	Same as *.*

Ambiguousfilenames are not only useful with the delete function. Many programs that you will encounter allow you to use metacharacters.

Section 15 - Copying Files.

You will quite often need to copy one file or a group of files between diskettes.

To copy files, you can use the TRANSFER program. To run TRANSFER, use icon 7. The screen should look like the one shown in Diagram 1.25.

To select the "Copy" function of transfer, hit the '1' key. The Copy screen will appear as shown below.

Transfer v1.0 (C) MicroWorld Australia 1984											
A:ASUB	.COM	2k	CMPRA	.COM	2k	CMPRH	.COM	2k	CP	.COM	4k
A:DDT	.COM	6k	GOSHELL	.COM	2k	HELP	.COM	10k	INIT	.COM	8k
A:MP	.COM	18k	SETDRIVE	.COM	2k	STAT	.COM	6k	SUBMIT	.COM	4k
A:TELCOM	.COM	12k	TRANSFER	.COM	8k	USER	.COM	42k	WS	.COM	18k
A:CCP	.SYS	4k	HELP	.MAN	32k	HELP	.NDX	2k	INITIAL	.TEL	2k
A:MP	.HLP	40k	MP	.OVR	44k	MP80	.	8k	SHELL	.SYS	6k
A:WSMSG	.OVR	30k	WSOVLY1	.OVR	34k						
A0: Disk A0: uses 348k in 26 files : 38k (9%) free of 390k total.											
COPY Select Files: (LINE FEED) == select (RETURN) == done											
█											

Diagram 1.52 - Copy Screen.

Once this screen is showing, you can indicate which files are to be copied in two ways.

Firstly, you can type in a number of file names. Any of these names may be ambiguous. If you want to copy all of the files, then you would use one file name only, namely "*.*".

Alternately, you can move the file cursor over the name of each file that you wish to copy, and then hit the <LINE FEED> key. When you do this, the name of the file will be shown in lower case and the file size will be shown in inverse. This indicates that the file has been selected for copying.

If you make a mistake, you can de-select the file by again placing the file cursor over the file and hitting the <LINE FEED> key again. When you do this, the name of the file will be displayed as it normally is.

You can indicate which files you want to copy using both techniques if you like.

The display on the next page shows a copy screen in which the files WS.COM, WSMSG.S.OVR and WSOVLY1.OVR are selected.

Transfer v1.0 (C) MicroWorld Australia 1984											
A:ASUB	.COM	2k	CMPRA	.COM	2k	CMPRH	.COM	2k	CP	.COM	4k
A:DDT	.COM	6k	GOSHELL	.COM	2k	HELP	.COM	10k	INIT	.COM	8k
A:MP	.COM	18k	SETDRIVE	.COM	2k	STAT	.COM	6k	SUBMIT	.COM	4k
A:TELCOM	.COM	12k	TRANSFER	.COM	8k	USER	.COM	42k	ws	.com	18k
A:CCP	.SYS	4k	HELP	.MAN	32k	HELP	.NDX	2k	INITIAL	.TEL	2k
A:MP	.HLP	40k	MP	.OVR	44k	MP80	.	8k	SHELL	.SYS	6k
A:wsmsgs	.ovr	30k	wsovly1	.ovr	34k						
A0: Disk A0: uses 348k in 26 files : 38k (9%) free of 390k total.											
COPY Select Files: (LINE FEED) = select (RETURN) = done											
STAT.COM											

Diagram 1.53 - Copy Screen.

Once you have selected the files that you wish to copy, hit the <RETURN> key. The copy program then checks to see if the files that you have nominated actually exist. If they do not, then you will be told so. You can then instruct the computer to copy the other files that you nominated or to abort the copy.

After this, you are asked to specify the "destination" of the copy. If you are copying one or more files from one diskette to another, then you would type the name of the drive that you wish to copy to. For instance, if you wished to copy some files from the diskette in Drive A to the diskette in Drive B, then the name of the destination would be "B:".

If you want to copy only one file on a diskette to another file on the same or another diskette, then the destination name is what you want the copy of the file to be called. For instance, if you want to make a copy of the file "A:MYFILE.TXT" and you want the copy to be on Drive B, called say, "HISFILE.DOC", then the name of the destination would be "B:HISFILE.DOC".

Section 16 - Renaming Files.

Another operation that you will need to be able to perform is to rename files. Again, this can be done using TRANSFER.

Run TRANSFER (using icon 7) and select option 2 - "Rename File".

You will be asked to enter the name of the file that you wish to rename. You may not type in an ambiguous file name, since you can only rename one file at a time. If you like, you can move the file cursor over the name of the file that you wish to rename and then hit the <RETURN> key.

After typing in the name of the file hit the <RETURN> key and you will be asked for the new name of the file. You may either type this name in or use the file cursor and the <LINEFEED> key.

It is not permissible to have two files with the same name on the one diskette. Hence, if the new file name that you type is the same as the name of another file on the diskette, you will be asked whether or not you want to delete the existing file. If you answer 'Y', then the old file will be deleted and the other file renamed. If you answer 'N', then no action is taken.

Section 17 - Displaying Files.

It is often convenient to display files on the screen. This can be done using TRANSFER.

Run TRANSFER using icon 7. Select the "Display File" option by hitting the '3' key. You will be asked to name the file that you wish to list on the screen. You may type in the name of the file or use the file cursor and <LINE FEED>. You may change the directory display on the screen if you need to by using the ^C and ^R keys.

After entering the name of the file, you will be asked to select two options. The ^S and ^D keys position the cursor over the options. When the cursor is in position over the option that you wish to change, you may hit the 'Y' or 'N' key to change the setting of the option.

The "Show Inverse" option allows inverse (black on white) characters to be actually displayed in inverse. If there is a cross in the "Show Inverse" box, then any inverse characters will be shown as normal characters. However, if you move the cursor over this cross and then hit the 'Y' key, then the cross will be replaced with a tick and inverse characters WILL be displayed as inverse.

The "Paginate Output" option causes the listing of the file to be performed in lots of one page. This means that the display is stopped after each page so that you can read the page before the next one is displayed. The alternative to this is to have the entire file displayed in one go.

Once you have selected the options as you want, then hit <RETURN> and the file will be displayed.

If the file is not displayed in the "Paginated" mode, then you can halt the listing by hitting ^S. Hitting <ESC> aborts the listing and returns you to the main TRANSFER screen.

If you list the file in paginated mode, then, after the first page appears on the screen, you may hit one of three keys;

<RETURN> to view the next line,

<SPACE> to view the next page, or

<ESC> to abort the listing.

Section 18 - Printing Files.

When you want to print a file on your printer, you have two options. You may choose to print the file using the "Print File" option in TRANSFER, or you may print the file using the program that created the file.

For instance, if you create a letter using WordStar, it is often convenient to print that letter using WordStar. WordStar has the ability to format its printer output into pages, with page numbers and other special printing features

However, it is sometimes more convenient to use TRANSFER to print files, especially when you don't want any of the fancy trimmings that WordStar and the other applications programs provide.

To print a file using TRANSFER, run TRANSFER with icon 7. Hit the '4' key to select the "Print File" function.

Type in the name of the file that you wish to print or select it using the file cursor and the <LINE FEED> key.

As with the "Display File" function of TRANSFER, the "Print" function has a number of options that you may elect to use.

The "Show Inverse" option works in the same manner as for the "Display File" function. If this option is not selected, inverse characters are converted to normal characters before they are sent to the printer.

The "Paginate Output" option allows output to the printer to be broken up into 62 line pages, with 2 blank lines at the top and bottom of each page.

In almost all cases, the "Binary File" option should not be selected.

Section 19 - Using Diskettes from Other Computers.

Some people who use the MicroBee 128K Computer may wish to read diskettes which have been created on other computers.

Conversely, it may be necessary to write diskettes in a format which can be read by other computers.

If you have no immediate need to read or write diskettes from other computers, then you can skip this section.

Firstly, you must set up your disk drives to accept the diskette from the other computer, using the SETDRIVE program.

Assume you have a diskette which was created on a Cromemco ClØ-P. To set up Drive B as a "ClØ" disk drive, you would type the command

```
setdrive b: clØ
```

This command only affects Drive B. You can still use normal MicroBee diskettes in Drive A. Of course, you can use a similar command to affect Drive A, but this is not as useful.

A list of all the currently supported formats may be obtained by typing "setdrive" and hitting RETURN.

Once the drive has been set up for the correct format, put the foreign diskette in the drive. You can then read and write from and to that diskette.

If you intend working extensively with the files from the foreign diskette, then it is a good idea to copy the files off the foreign diskette onto a normal MicroBee diskette. You can then copy the altered files back onto the foreign diskette when you are finished.

Drive formats affected by SETDRIVE may be changed back to normal by hitting RESET.

Section 20 - The Help Function.

You have already encountered the "On-line Help" function. You may remember that you can access the help system by using icon 9.

(To use HELP, you must have these three files on the diskette in Drive A;

HELP.COM,
HELP.NDX, and
HELP.MAN.)

Once HELP is running, you can ask for information on a number of different topics. These topics are;

- 1 - List the definitions of the 10 icons.
- 2 - Explain the use of the cursor control keys.
- 3 - Explain how commands are entered.
- 4 - Give information on a number of different programs.

The first three help topics explain themselves. However, topic 4 is worth discussing here.

When you select HELP function 4, a list of all of the available manual entries is shown on the screen. If you want to know some information about a particular program, then you can simply type the name of the command and then hit RETURN. The information on that program will show on the screen.

After the first screenful of information is displayed, you can hit RETURN to see the next line of the help entry, ESC to abort the listing, or any other key to see the next page of the entry.

For instance, if you wanted to know how to use the program CMPRA, then you would run HELP using icon 9, select HELP function 4 and then type "CMPRA" and hit RETURN.

Alternately, you can invoke help on a particular program directly from the Shell by typing a command like "HELP CMPRA".

If you wish to modify or add to the on-line manual, then see the manual entry for MANINDEX. Changing the manual is a task that you should not attempt until you are familiar with WordStar.

Section 21 - Error Messages.

During the operation of your computer, you may encounter a number of error messages that have to do with your disk drives. This section tells you what you should do when you encounter such error messages.

"Disk n is write protected - press RETURN to try again"

- The diskette in Drive n (A or B) has a write protect tab on it and an attempt has been made to write onto that diskette. If you want the write to take place, remove the write protect tab and then hit RETURN. If you don't want the diskette to be written on, then hit RESET.

"CP/M err on n: Bad sector"

- The diskette that you are using has a faulty block of data on it. Hitting any key will cause the computer to ignore the error, but you should be aware that the data in the faulty block will often be read incorrectly. The best way around the problem is to make back-ups. If you REALLY need to recover the files on the faulty diskette, then copy the files off that diskette onto another diskette. Note that the fault on the diskette may be corrected by re-initialising it.

"CP/M err on n: R/O"

- You have changed a diskette in a disk drive when you should not have. RESET the computer.

"CP/M err on n: File R/O"

- The file that you are attempting to write on is not allowed to be written on. Type the command "STAT *.* \$R/W" and hit return. This sets all the files so that you can write to them.

"CP/M err on n: Select".

- The program that you are running has attempted to access a non-existent disk drive. RESET the computer.

Section 22 - Salutations.

Congratulations! You have now read through the entire tutorial. You may need to refer back to parts of this chapter if you forget how to do something.

The rest of this manual consists of the following;

Chapter 1 - Using WordStar. Read this before running WordStar.

Chapter 2 - Using Multiplan. Read this before running Multiplan.

Chapter 3 - The CP/M CCP. This chapter is for people who want to use the normal CP/M CCP.

Chapter 4 - Reference manual. This is a convenient, concise summary of most of the commands in the system.

The SYBIZ package is not given a great deal of mention in this manual because it is thoroughly explained in the Sybiz manual. Likewise, MicroWorld and MicroSoft Basics are also explained in their respective manuals.

Further up-to-date information may be found on the "Utilities" diskette in a file called "HELP". You can use TRANSFER to look at this file.

Chapter 2

Using Wordstar on the 128k microbee



Chapter 2 - Using WordStar on the 128K MicroBee.

Your MicroBee Small Business Computer comes with two WordStar Manuals. The "WordStar Training Guide" is a tutorial which teaches you how to use WordStar. The "WordStar Reference Manual" contains all the detail about WordStar, including all the commands etc.

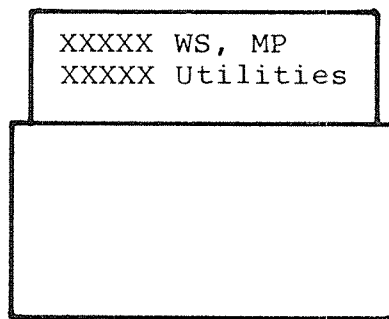
In this chapter, we will give some practical hints on using WordStar on the 128K MicroBee. These points are not covered in the WordStar manual, so we suggest that you read these brief notes before going through the manuals.

Section 1 - Diskettes.

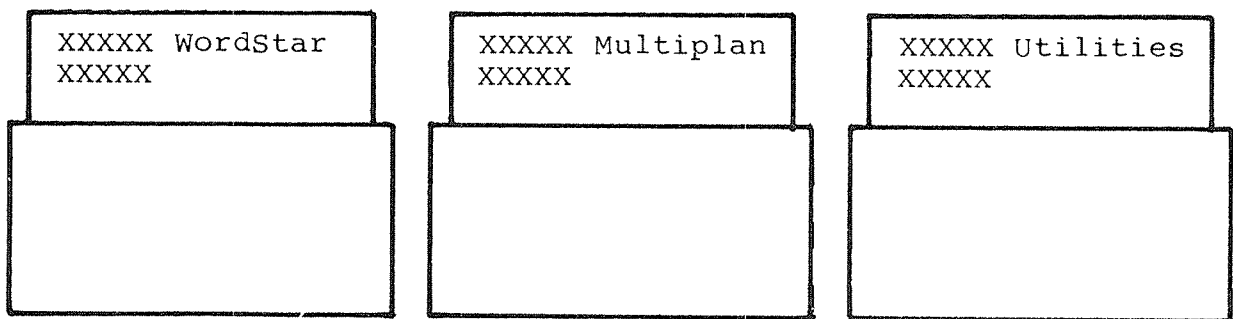
To start with, let's discuss the way in which you should set up your diskettes.

Firstly, you should decide whether you are going to use a "general purpose master" diskette or a number of specific masters, one for each application program. For instance, you can put WordStar, Multiplan, Telcom etc. on one diskette. This is a general purpose diskette.

On the other hand, you can use one master diskette for WordStar, another master for Multiplan, another for utilities etc.



(a) General-Purpose Master.



(b) Specific Masters.

Diagram 2.1 - Master Diskette Organisation.

The advantage of using separate masters is that you will have a fairly large amount of space left on the master disk to create and edit files.

If you use a general-purpose master, then there will not be a great amount of space left on the diskette. In this case, you need a second diskette, used in Drive B, to save your files on.

It is probably best to start off with a general-purpose master. Most people find this the most convenient way to operate. What's more, the "System Master" that you used in Chapter 1 of this manual is already set up as a general-purpose master.

When using specific WordStar master, you need these WordStar files on your disk;

```
WS      .COM
WSMSGs  .OVR
WSOVLY1 .OVR
```

In addition, you will need the file;

```
SHELL  .SYS
```

You will probably also want;

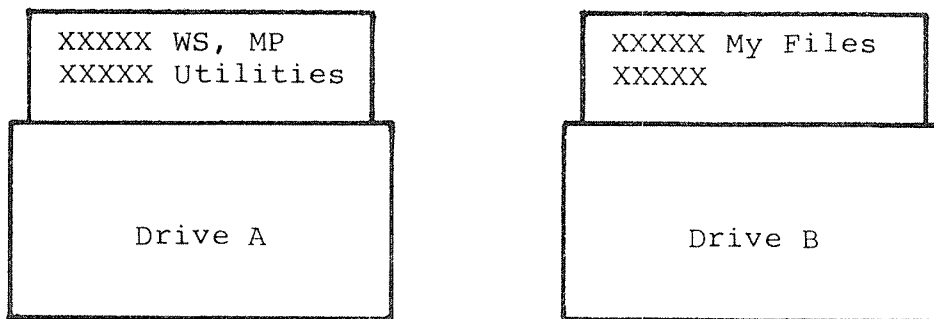
```
TRANSFER.COM
INIT      .COM
TELCOM   .COM
INITIAL  .TEL
```

To use WordStar, you must put your master diskette in Drive A.

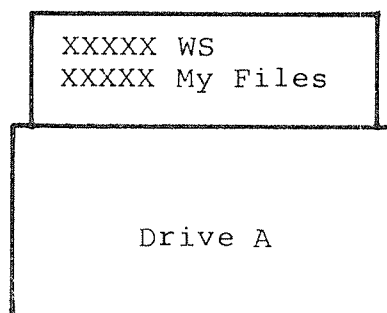
Now, if you are using a general-purpose master, put your work disk into Drive B and then set Drive B as the default drive (by typing B: and hitting RETURN). If you are using WordStar for the first time, then this would be a new disk. (Remember that you must initialise a diskette using INIT before you can use the diskette.)

If you are using a specific WordStar master, then you should decide whether or not you are going to save your files on the master diskette or on a separate diskette. If you are using a separate diskette, then put it into Drive B, and then set Drive B as the default drive.

Now hit the '1' key and WordStar will run.



(a) Two Disk Setup.



(b) Single Disk Setup

Diagram 2.2 - Using WordStar.

Section 2 - Using the M Drive.

We said in Chapter 1 that by using the M Drive, it is possible to speed up the operation of the system.

You can use the M Drive with WordStar with files that are less than about 20K long. Set Drive M as the default drive, and run WordStar.

Copy the file that you wish to edit into the M Drive using the WordStar file copy function. Edit the file as usual, save it, and then copy the file back onto your work diskette.

You should remember that the contents of the M Drive is destroyed when the power fails. To protect your files, it is a good idea to save the file at regular intervals and then copy the file onto diskette.

Another consideration when using the M Drive is the fact that you decrease the amount of disk buffer space available when you put files into the M Drive. If you entirely fill the M Drive with files, then the performance of the system will decline because of the lack of disk buffering.

Section 3 - Printing.

Before you can use a printer from WordStar, it is necessary to check that your software is set up to use either the serial or parallel port on the MicroBee. The software setup is performed through the INIT program; the procedure was described in Chapter 1 of this manual.

Section 4 - Custom Configuration.

The version of WordStar that you receive with your computer has been set up to operate in the fastest possible manner on the MicroBee. There is generally no need to alter the way in which WordStar is configured.

However, if you do wish to change some parameter, then this can be done by using the INSTALL program which can be found on the "Utilities" diskette.

The WINSTALL program explains itself. However, if you need extra assistance in setting up your WordStar, then the "WordStar Installation Guide" can be obtained from your supplier.

Chapter 3

Using Multiplan on the 128k microbee



Chapter 3 - Using Multiplan on the 128K MicroBee.

Your MicroBee Small Business Computer comes with a manual titled "MicroSoft Multiplan". This describes how to use the Multiplan program.

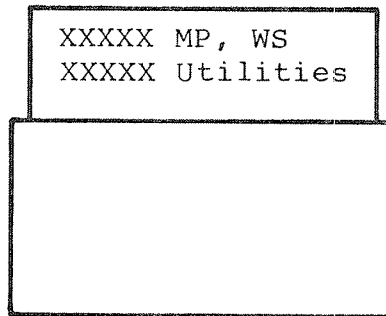
In this chapter, we will give some practical hints on using Multiplan on the 128K MicroBee. These points are not covered in the Multiplan manual, so we suggest that you read these brief notes before going through the manual.

Section 1 - Diskettes.

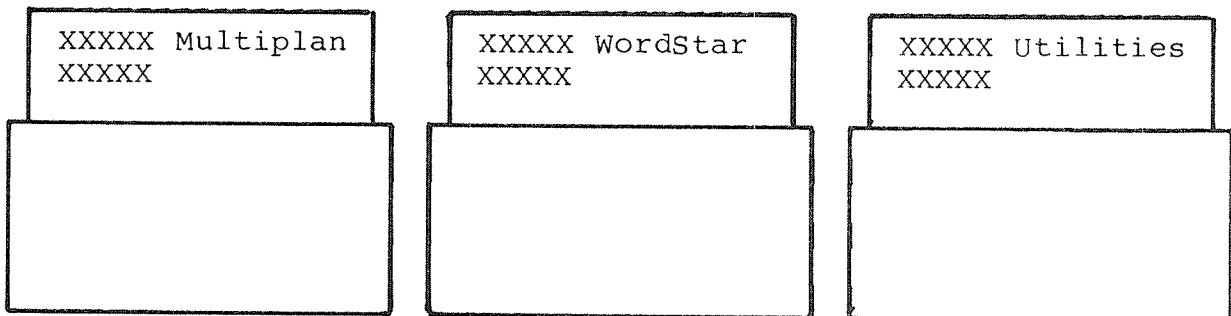
To start with, let's discuss the way in which you should set up your diskettes.

Firstly, you should decide whether you are going to use a "general purpose master" diskette or a number of specific masters, one for each application program. For instance, you can put WordStar, Multiplan, Telcom etc. on one diskette. This is a general purpose diskette.

On the other hand, you can use one master diskette for Multiplan, another master for WordStar, another for utilities etc.



(a) General-Purpose Master.



(b) Specific Masters.

Diagram 2.1 - Master Diskette Organisation.

The advantage of using separate masters is that you will have a fairly large amount of space left on the master disk to create and edit files.

If you use a general-purpose master, then there will not be a great amount of space left on the diskette. In this case, you need a second diskette, used in Drive B, to save your files on.

It is probably best to start off with a general-purpose master. Most people find this the most convenient way to operate. What's more, the "System Master" that you used in Chapter 1 of this manual is already set up as a general-purpose master.

When using specific Multiplan master, you need these Multiplan files on your disk;

```
MP      .COM
MP      .OVR
MP      .HLP
MP80
```

In addition, you will need the file;

```
SHELL .SYS
```

You will probably also want;

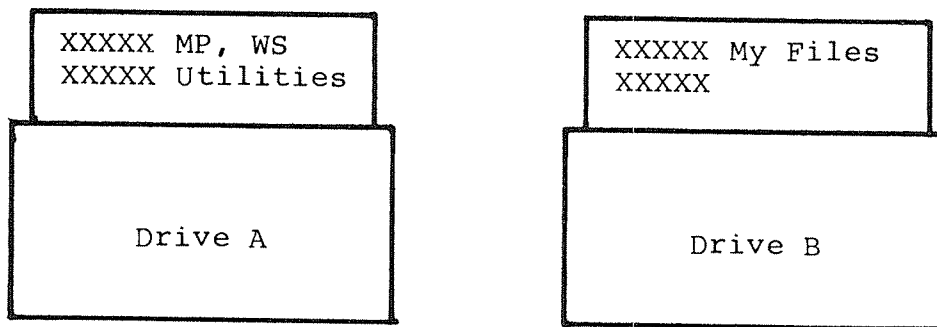
```
TRANSFER.COM
INIT      .COM
TELCOM    .COM
INITIAL   .TEL
```

To use Multiplan, you must put your master diskette in Drive A.

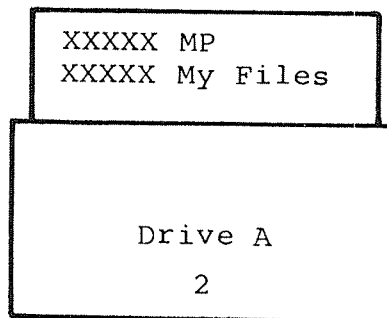
Now, if you are using a general-purpose master, put your work disk into Drive B and then set Drive B as the default drive (by typing B: and hitting RETURN). If you are using Multiplan for the first time, then this would be a new disk. (Remember that you must initialise a diskette using INIT before you can use the diskette.)

If you are using a specific Multiplan master, then you should decide whether or not you are going to save your files on the master diskette or on a separate diskette. If you are using a separate diskette, then put it into Drive B, and then set Drive B as the default drive.

Now hit the '2' key and Multiplan will run.



(a) Two Disk Setup.



(b) Single Disk Setup

Diagram 2.2 - Using Multiplan.

Section 2 - Using the M Drive.

We said in Chapter 1 that by using the M Drive, it is possible to speed up the operation of the system.

Copy the file that you wish to edit into the M Drive before running Multiplan. Edit the file as usual, save it, and then copy the file back onto your work diskette after exiting from Multiplan.

You should remember that the contents of the M Drive is destroyed when the power fails. To protect your files, it is a good idea to save the file at regular intervals and then copy the file onto diskette.

Another consideration when using the M Drive is the fact that you decrease the amount of disk buffer space available when you put files into the M Drive. If you entirely fill the M Drive with files, then the performance of the system will decline because of the lack of disk buffering.

Section 3 - Printing.

Before you can use a printer from Multiplan, it is necessary to check that your software is set up to use either the serial or parallel port on the MicroBee. The software setup is performed through the INIT program; the procedure was described in Chapter 1 of this manual.

Chapter 4

The CP/M CCP



Chapter 4 - The CP/M CCP.

This chapter describes how to use the CP/M Console Command Processor (CCP). Most users of the MicroBee 128K computer do not need to use the CCP and this chapter is therefore irrelevant to these people.

However, other people who are familiar with the CCP may prefer to use the CCP. This chapter is a reference manual on the CCP designed for such people.

Section 1 - Control Keys.

In this section, we will describe the various control keys and functions that the CCP recognises in case any user has need of the CCP.

control-C	Generally stops a command running and returns control to the CCP.
control-S	Stops most programs until another key is hit. This is especially useful when listing files on the screen.
control-P	Causes all the text that is sent to the screen to be also sent to the local printer (if connected). Hitting the key again will stop the printer output.
control-X	Erases the line currently being typed.
control-U	Same as control-X, but the screen is moved up one line to leave the line being deleted on the screen.
<return>	Enter the command just typed.
BACK SPACE	Remove one character from the command line.
DELETE	Remove one characters from the command line, but echo the removed character on the screen.
BREAK	Same as control-X.

When using the CCP, it is necessary to distinguish between cold starts and warm starts.

A cold start occurs whenever you reset the computer. On the other hand, warm starts usually occur when a program finishes and passes control back to CP/M. You can force a warm start by hitting ^C at the start of line when the CP/M prompt appears.

When you wish to change a diskette when using the CCP, it is essential to hit ^C after changing the diskettes.

Section 2 - In-Built Commands.

The CCP has a number of in-built (non transient) commands;

ERA	Erase files.
SAVE	Save memory
REN	Rename a file.
TYPE	List a file
DIR	List file directory.
USER	Change default user area.

Each of these commands is described in detail in the reference section of this manual.

When using the CP/M CCP, it is necessary to have the file CCP.SYS on the diskette in Drive A.

Chapter 5

CP/M Reference Manual



Chapter 5 - CP/M Reference Manual.

This chapter is a reference manual for CP/M. Each of the most commonly used commands is explained in terms of its function and usage. As well, a brief summary of the functions of the user interface is given below.

Section 1 - Definitions.

Throughout this chapter, a number of definitions are used:

file name	A CP/M file name, consisting of three parts. The first is the drive name, A to P followed by a colon. The next, the "name", is up to eight characters in length. Finally, the "extension" is separated from the name by a '.', and may be up to three characters long.
------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

A:WHATABIG.FIL

Drive name	File name	Extension
------------	-----------	-----------

afile	An ambiguous file reference (a file name containing question marks or stars, like FRED?.*). A name like this can refer to many files.
--------------	---------------------------------------------------------------------------------------------------------------------------------------

file	An unambiguous file name (containing no question marks or stars). This name is unambiguous because it refers to one file only.
-------------	--------------------------------------------------------------------------------------------------------------------------------

d:	A drive name (such as A: or B:).
-----------	----------------------------------

du:	A drive/user name (such as A1: or B6:).
------------	-----------------------------------------

n	Any integer.
----------	--------------

{ }	Anything enclosed in these curly brackets is optional.
------------	--------------------------------------------------------

Section 2 - The Shell.

The Shell is an icon-based, user-friendly replacement for the normal CP/M Console Command Processor (CCP).

When the initial Shell display appears on the screen after boot up, commands may be entered in one of three ways;

By hitting a number key, 0 - 9, the program indicated by the icon with this number is run. The programs are;

1 - WS.COM	(WordStar).
2 - MP.COM	(MultiPlan).
3 - DBASE.COM	(Data Base program).
4 - USR.COM	(USER function).
5 - INIT.COM	(Diskette INITIALisation).
6 - TELCOM.COM	(Telecommunications).
7 - TRANSFER.COM	(File TRANSFERS).
8 - DELETE	(Remove files).
9 - HELP.COM	(Help).
0 - CCP	(Run Normal CCP).

A program may be run by moving the file cursor over the name of a file and then hitting RETURN. The file cursor is moved by the following control keys;

Up
E
Left - S D - Right
X
Down

The last way in which a program may be run is by typing the command using the letters and symbols on the keyboard. When typing in a command in this way, it is possible to move the file

cursor over the name of a file and bring the name of that file onto the command line by pressing LINE FEED.

The Shell allows you view the directories of the diskettes in other drives using the ^C and ^R keys. Hitting ^C displays the directory of the diskette in the next drive in the system. ^R displays the directory of the diskette in the previous drive.

The various drives, in sequence, are;

A	Physical drive A.
B	Physical drive B.
L	The logical drive.
M	The Memory drive.

Shell allows you to set any drive and user area number as the default by typing the drive name, and optionally the user area number, followed by a colon, and then RETURN.

Hitting ESCape at any time whilst entering a Shell command terminates the command and returns the icons to the screen.

After an applications program has terminated and returned execution to the Shell, the Shell displays the icons at the top of the screen. When this happens, the user may hit a number key to run a program as normal, or SPACE to bring the normal Shell display back onto the screen.

Section 3 - Command Reference Manual.

Each manual entry is divided into a number of sections:

Name	The name of the command.
Synopsis	The command format.
Environment	Where the command is run - Shell, CCP, CP/M (both).
Description	What the program does.
Examples	How the command is used.
Errors	What they mean.
See also	Related commands and manual entries.

BASIC

BASIC

Name: BASIC - MicroWorld Basic.

Synopsis: basic

Environment: CP/M.

Description:

BASIC is the disk version of MicroBee Basic. BASIC is described in the MicroBee Basic User's Manual.

Examples:

B>basic <return>

See also:

MBASIC, TBASIC.
MicroWorld Basic User's manual.

CMPRA

CMPRA

Name: CMPRA - ASCII compare program.

Synopsis: cmpra ufile1 ufile2
cmpra ufile d:

Environment: CP/M.

Description:

CMPRA scans the two files specified for a difference. If CMPRA detects a difference between the two files, it will print the lines from both files in which the difference was found. CMPRA also prints the line numbers of the differing lines. Once a difference is found, CMPRA is aborted.

CMPRA is useful for detecting copying errors as well as determining if a file has been updated or changed from some previous version.

Examples:

```
B>cmpra test.doc test2.doc

ASCII compare V1.0 (c) R.C.H. 1982
Files match, length is 1664 decimal bytes

B>_
```

Error Messages:

"Filespec not found"
The named file does not exist.

See also:

CMPRH.

CMPRH

CMPRH

Name: CMPRH - Hexadeciaml compare program.

Synopsis: cmprh ufile1 ufile2
cmprh ufile d:

Environment: CP/M.

Description:

CMPRH scans the two specified files for differences. Any differences, if found, will be reported.

CMPRH is useful for detecting copying errors as well as determining if a file has been updated or changed from some previous version.

Examples:

```
B>cmprh test.mwb test2.mwb

Hex compare   V1.0 (c) R.C.H. 1982

Files match, length is  2642  Decimal bytes

B>_
```

Error Messages:

```
"Filespec not found."
    The named file does not exist.
"File 1 ended before file 2."
    The two files were of unequal length.
"File 2 ended before file 1."
    The two files were of unequal length.
```

See also:

CMPRA.

Name: CP - Copy program.

Synopsis: cp {-v} ufile1 ufile2
cp {-v} afile1 ... afileN d:
cp

Environment: CP/M.

Description:

COPY is a simple file copy program. In the first form, COPY copies the unambiguous file ufile1 to ufile2. In the second form, COPY copies all the files matched by the list of ambiguous files references to the drive specified by 'd:'. In the last mode, COPY enters an interactive mode, indicated by the "*" prompt, in which any number of either of the two command forms can be used. Interactive mode is exited by hitting return on an empty line.

Examples:

```
B>cp test.mwb backup.mwb

B>cp *.mwb *.bas a: <return>

B>cp <return>
*test.mwb backup.mwb <return>
**mwb *.bas a: <return>
* <return>

B>_
```

Error Messages:

"Too many files specified"

Too many file names were given on the command line.

"No files found to match ... "

The ambiguous file reference that you specified as the source name does not match any files on the disk specified.

"Could not open ... "

The file that you wanted to copy from does not exist.

"Could not close ... "

Disk or workspace full.

"Disk full."

Disk or workspace full.

"No more directory space available."

There are too many files on the disk or workspace.

See also:

PIP.

TRANSFER.

DDFORMAT

DDFORMAT

Name: DDFORMAT - Disk formatter.

Synopsis: ddformat

Environment: File server.

Description:

DDFORMAT prepares a new or raw disk for use, and can be used to clear old disks and possibly allow the re-use of apparently faulty disks.

DDFORMAT requests the name of the drive which contains the disk to be formatted. It also asks if both sides of the disk are to be formatted. The answer to this question should be "yes", except in special circumstances. You may abort DDFORMAT during this initial question period by hitting control-C.

DDFORMAT will attempt to format the disk. If any track on the disk cannot be formatted correctly, then it will report this error. If this error message appears, then you should attempt the format again. If repeated attempts still bring up this message, the disk is faulty. If it is a new disk, return it to your supplier.

The format may be aborted at any time by hitting the ESCape key.

Examples:

```
B>ddformat <return>
```

```
Insert disk and enter drive (A,B,C,D) ? b
```

```
Format noth sides (y/n/^C) ? y
```

```
Insert disk and enter drive (A,B,C,D) ? <return>
```

Error messages:

```
**** Formatting error detected ****
```

```
The DDFORMAT program could not correctly format the  
disk. See the comments above.
```

"That disk is write protected"

The disk you are trying to format has a write protect tab on it. Remove the tab and try again.

"Format has been aborted by the ESC key"

You hit the ESCape key and the format was aborted.

See also:

INIT.

DDT

DDT

Name: DDT - Dynamic Debugging Tool.

Synopsis: ddt {file}

Environment: CP/M.

Description:

DDT is the standard CP/M program debugging tool. DDT may be invoked on its own, or optionally with an unambiguous file name. In the latter case, the file specified by this reference is loaded into memory at 100H after DDT has been loaded into memory and moved itself to the top of memory.

DDT prompts the user with a '-' prompt. DDT will accept the following commands. Note that you can not put any spaces in the commands.

A nnnn

Assemble from user input into storage. The user enters 8080 assembler instructions and DDT prompts with successive addresses, starting from nnnn. Terminate input with an empty command line.

D {start}{,end}

Dump the contents of memory starting from the last dumped address, or start if specified. One screen of memory is dumped unless end is specified where the dump is continued to the address end.

F start,end,xx

Fill memory from start to end with xx.

G {start}{,b1{,b2}}

Jump to the CPU's program counter, or start if specified. One or two breakpoints (b1 and b2) may be specified. If specified, the instructions at the breakpoint addresses are replaced with RST 7 instructions. When program execution reaches these points, the RST 7 will cause DDT to be re-entered.

H first,second

Hex arithmetic. DDT prints the values of first+second and first-second.

I fileref

Initialise a FCB. **fileref** is placed in the default File Control Block (FCB) at 5CH. I does not set up any drive code. Use S to set up a drive code. I is commonly used with the R command to read in files.

L {start}{,end}

List instructions. DDT disassembles the code from **start** to **end** if these addresses are specified. Otherwise, listing starts at the last address disassembled. The DELEte key stops the listing.

M start,end,to

Move the contents of the block of memory at **start** through **end** to the address **to**.

R {offset}

Read program. The file named in the FCB at 5C is read into memory at 100H if it has the extension ".COM". If the file has the ".HEX" extension as produced by the CP/M assembler, the file is loaded to its assembled origin. After loading, DDT will display the highest load address used as well as the current value of the program counter.

S start

Substitute memory, starting at address **start**. DDT prompts with this address and its current value. You may enter a new value, or hit return to move to the next address. Enter a full stop ('.') and hit return to end session.

T {count}

Trace program execution. **count** instructions are executed and register status may be examined using the X command. If count is not specified, it is assumed to be 1.

U {count}

Trace without displaying status. Instructions are traced exactly like the T command except that no display is generated between instructions.

X

Displays the state of the registers, including the program counter and the next instruction to be executed, pointed to by the program counter.

X register

Modify register. Valid register names are A, B, D, H,

S (for SP), P (for PC). Flags may also be modified - C, Z, M, E and I. DDT prompts with the contents of the register. You may enter a new value for that register or hit return to leave it unaltered.

Error messages:

"?" DDT doesn't understand your command.

See also:

ASM.

DIR

DIR

Name: DIR - directory lister.

Synopsis: dir
dir afile

Environment: CCP.

Description:

DIR displays the directory of the specified disk. If an ambiguous file reference is given, then all files in the directory that match that reference are listed.

If no file reference is specified, then the entire directory is listed.

Examples:

```
B>dir <return>
MYPROG .MWB | SAMPLE .DOC | TEST .SUB

B>dir *.mwb <return>
MYPROG .MWB

B>_
```

Error Messages:

"No file."
No files were found to match the file reference given.

See also:

STAT.
Section 1.4.

DTCOPY

DTCOPY

Name: DTCOPY - Disk to Tape copier.

Synopsis: dtcopy

Environment: CP/M.

Description:

DTCOPY reads files from disk and makes MicroBee standard tape copies of them. These tapes may be used for archival storage of programs or to transfer programs to ROM based MicroBees.

When DTCOPY is invoked, the user will be prompted for the name of the file to be saved. The file name may be ambiguous. DTCOPY will find each file that matches the name given and ask if the file should be skipped or saved. The possible responses to this question are:

/ skip file and move to the next one.
<return> dump the file, with a 900H starting address.
* dumps this and all remaining files at 900H, without asking whether or not the file should be saved.
nnnn where nnnn is the desired starting address will dump the file with that starting address. Do not edit the number using BACK SPACE or DElete, just type the entire number again.

Examples:

Error Messages:

"No file."
No files were found to match the file reference given.

See also:

TDCOPY, BASIC.

DUMP

DUMP

Name: DUMP - Hex file lister.

Synopsis: dump file

Environment: CP/M.

Description:

DUMP displays the hexadecimal contents of the specified file, 16 bytes to a line. The address of each line relative to the start of the file is also shown.

As usual, control-S pauses the listing and control-C stops it.

Examples:

```
B>dump fred.qwe <return>
```

```
0000 45 AB 56 DB E4 56 67 24 ED 46 A5 46 57 34 45 65
0010 AB D3 E6 54 BF 78 37 DE A4 C1 E3 D6 F6 4D 3D 2D
0020 56 DB E4 56 67 24 ED 46 A5 46 57 34 45 65 56 5D
0030 D3 E6 54 BF 78 37 DE A4 C1 E3 D6 F6 4D 3D 2D 4E
0040 E4 56 67 24 ED 46 A5 46 57 34 45 65 4A 35 BD 26
0050 54 BF 78 37 DE A4 C1 E3 D6 F6 4D 3D 2D 46 D7 A8
0060 E4 56 67 24 ED 46 A5 46 57 34 45 65 56 5D 28 22
0070 E6 54 BF 78 37 DE A4 C1 E3 D6 F6 4D 3D 2D 4E 32
```

Error Messages:

"NO INPUT FILE PRESENT ON DISK"

No file was found to match the file reference given.

See also:

DDT.

ED

ED

Name: ED - CP/M line editor.

Synopsis: ed file {d:}

Environment: CP/M.

Description:

ED is the standard CP/M line editor. Unless you have some special reason to do so, do not use ED. Use WordStar or WordBee instead.

Examples:

A>era ed.com <return>

Error Messages:

See also:

WS.
WORDBEE.

ERA

ERA

Name: ERA - ERase files.

Synopsis: era afile {v}

Environment: CCP.

Description:

ERA allows the user to remove files from a disk. The file name specified may be ambiguous, in which case all files matching that reference will be deleted.

Examples:

```
B>dir <return>
TEST      .MWB | TEST2   .MWB | ESSAY   .DOC | E2      .DOC
TEST      .BAK | FRED    .MWB | TOM     .MWB

B>era *.mwb <return>
B>dir <return>
ESSAY     .DOC | E2      .DOC | TEST   .BAK | TOM     .MWB

B>_
```

Error Messages:

"No file."
No files were found to match the file reference given.

See also:

DELETE.

MBASIC

MBASIC

Name: MBASIC - MicroSoft Basic.

Synopsis: mbasic

Environment: CP/M.

Description:

MBASIC is the MicroSoft Basic interpreter. MBASIC is described in the MicroSoft Basic User's manual.

Examples:

Error Messages:

See also:

BASIC, TBASIC.
MicroSoft Basic User's Manual.

MP

MP

Name: MP - MultiPlan Spread sheet.

Synopsis: mp

Environment: CP/M.

Description:

Multiplan is the MicroBee spreadsheet program. It is described in the Multiplan manuals.

Examples:

Error Messages:

See also:

MultiPlan Manual.
Chapter 3.

Name: PIP - Peripheral Interchange Program.

Synopsis: pip
 pip dest=source[options]
 pip d:=afile[options]

Environment: CP/M.

Description:

PIP copies data between disks and other devices. Unless the special facilities of PIP are required, the MicroBee program CP should be used.

Pip can be used in a number of ways:

```

pip d:dest=d:file  copies d:file to d:dest.
pip d:=d:afile     copies multiple files to d:.
pip lst:=d:file    sends d:file to the lst: device (the
                  printer).
```

A pip command may be followed by a number of options. These must be enclosed in square brackets ([and]), with no spaces between the open bracket and the rest of the command. The most useful of the available options are shown below:

Dn	Truncate input lines after the nth column.
E	Echo all data on the screen as it is copied.
F	Remove formfeeds (ASCII 0CH) from file.
Gn	Look for file under user n.
L	Translate uppercase letters into lower case.
N1	Add numbers of the form '99:" to each line.
N2	Add the numbers "00000099:" to each line.
O	Not a text file; do not stop copying when EOF character (1AH) found.
Pn	Insert a formfeed after every n lines. If n is omitted, 60 is assumed.
Qstring	Stop copying after string has been copied.
R	Read SYSTEM files as well as DIRECTORY files.
Sstring	Start copying after string is found.
Tn	Replace tabs with spaces to simulate tab stops at every nth column. If n is omitted, a value of 8 is assumed.
U	Translate lower case letters into upper case.
V	Verify that the file was copied correctly.
W	Overwrite a read/only file without asking for the user's permission. Use of this option is unwise.

Note that all non-text files must be copied with the 'O' option. The option is inserted automatically for ".COM" files.

PIP also supports an interactive mode, entered by typing the CP/M command "pip", and indicated by the star prompt "*".

Examples:

```
B>pip a:copy.doc=b:original.doc <return>
    (Copies b:original.doc to a:copy.doc)

B>pip a:=b:*.mwb <return>
    (Copies all ".MWB" files on drive b onto drive
    a.)

B>pip lower.doc=upper.doc[LQend] <return>
    (Copies upper.doc to lower.doc, translating all
    uppercase letters into lower case, and stopping
    when the string "end" is encountered in
    upper.doc.

B>pip <return>
    (Enter interactive mode.)

*a:=*.mwb[o] <return>
*a:=*.doc[usstart] <return>
* <return>

B>_
```

Error Messages:

```
"NOT FOUND"
    No file was found to match a file reference given.
"CANNOT WRITE"
    PIP could not write.
"CANNOT READ"
    PIP cannot read.
```

See also:

```
CP.
TRANSFER.
```

REN

REN

Name: REN - RENAME file.

Synopsis: ren newfile=oldfile

Environment: CCP.

Description:

REN allows the user to change the names of files. If the new name of the file that the user specifies is the name of an existing file, the user is asked whether or not the existing file is to be deleted. If the file is not to be erased, the command is aborted.

Examples:

```
B>dir <return>
FRED .MWB | TOM .MWB

B>ren eric.mwb=fred.mwb <return>
B>dir <return>
ERIC .MWB | TOM .MWB

B>ren tom.mwb=eric.mwb <return>
Erase TOM .MWB ?y

B>dir <return>
TOM .MWB

B>_
```

Error Messages:

"No file."

The file you specified to be renamed does not exist.

See also:

TRANSFER.

SAVE

SAVE

Name: SAVE - File saver.

Synopsis: save n file

Environment: CCP.

Description:

SAVE writes the contents of memory, starting at location 100H (256 decimal), for n 256 byte blocks, to file.

If a file with the given name exists, then the user is asked whether or not the file should be overwritten. If the user answers "no", then the command is aborted.

Examples:

```
B>save 16 fred.dat <return>
B>stat fred.dat <return>

  Recs  Bytes  Ext Acc
    32    4k   1 R/W FRED.DAT

B>_
```

Error Messages:

"No file."
The file you specified to be renamed does not exist.

See also:

STAT

STAT

Name: STAT - STATistics.

Synopsis: stat d:
stat dsk:
stat usr:
stat d:=r/o
stat afile
stat afile \$r/o
stat afile \$r/w
stat afile \$sys
stat afile \$dir

Environment: CP/M.

Description:

STAT lists important system statistics. The various forms of STAT commands are shown below.

stat d:	Report free space on drive d:.
stat dsk:	Report disk parameters.
stat usr:	Report active user number and the user numbers for which files exist.
stat d:=r/o	Set d: to read/only (disable write permission to drive). Temporary only; warm or cold start will reset this status.
stat afile	List name and size parameters for the group of files matched by afile.
stat afile \$r/o	Set the files matched by afile to read/only.
stat afile \$r/w	Set the files matched by afile to read/write.
stat afile \$sys	Set the files matched by afile to system (hide them in the DIR display).
stat afile \$dir	Set the files matched by afile to directory (reverse the \$sys attribute).

Examples:

```
B>stat *.* <return>
  Recs  Bytes  Ext Acc
    32   4k   1 R/W FRED.DAT
    16   2k   1 R/O TOM.WAB
    64   8k   1 R/W ERIC.PUT

B>_
```

Error Messages:

"NO FILE" The specified file does not exist.

See also:

DIR.
Chapter 1.

SUBMIT

SUBMIT

Name: SUBMIT - Submit a file for automatic execution.

Synopsis: submit file {parameters}

Environment: CCP.

Description:

Immediately after a warm or cold start, the CCP looks for the file "\$\$\$\$.SUB" on the default drive. If found, it reads its next command from that file and attempts to execute it. SUBMIT allows the user to generate the "\$\$\$\$.SUB" file from a text file consisting of CP/M commands. The text file should have the extension ".SUB".

In the .SUB file, any line that begins with a semi-colon (;) is treated as a comment. You may use this facility to put remarks or instructions in files. Note that SUBMIT contains a bug in that any line with no characters on it will cause SUBMIT to crash. DON'T USE EMPTY LINES!

When SUBMIT runs, it will substitute any occurrence of the dollar sign symbol ('\$'), followed by a digit (1-9) with the corresponding parameter on the command line. "\$1" will be replaced with the first parameter, etc. This allows more versatile operation of submit files.

If a parameter is specified, but is not referred to in the submit file, it is ignored. Any "\$n" symbols that do not have a corresponding parameter on the command line are not substituted. The symbol "\$0" is replaced with the name of the submit file.

Examples:

```
B>type fred.sub <return>
ws $1
basic
era $2

B>submit fred.sub test.doc *.mwb <return>

B$WS TEST.DOC
.
B$BASIC
.
B$ERA *.MWB
.
B>_
```

Error Messages:

See also:

SYSGEN

SYSGEN

Name: SYSGEN - System track writer.

Synopsis: sysgen {file}

Environment: CP/M.

Description:

SYSGEN is a program that allows the CP/M operating system to be moved between disks and memory. SYSGEN can read the system off a disk, or if file is specified, from the named file. The usage of SYSGEN is fully described in the Network System Manual.

Examples:

Error Messages:

See also:

INIT.

TBASIC

TBASIC

Name: TBASIC - Tape Basic.

Synopsis: tbasic

Environment: CP/M.

Description:

TBASIC is a program which effectively transforms a disk or workstation MicroBee into a ROM Basic MicroBee by loading a slightly modified version of Basic into RAM at 8000H and changing the start vectors in the machine to return control to Basic when the reset key is hit.

Examples:

Error Messages:

See also:

BASIC, MBASIC.
MicroWorld Basic User's Manual.

TDCOPY

TDCOPY

Name: TDCOPY - Tape to Disk copier.

Synopsis: tdcopy

Environment: CP/M.

Description:

TDCOPY reads any MicroBee tape file into memory. Once the tape has loaded, the user is asked whether or not the file is to be saved. If the user enters '/', then the file is skipped. If the user hits <return>, then the user is prompted for the file name, and the file is saved onto disk.

Note that the file starting address is not recorded in the CP/M file so you should either make a note of it or include the address in the name of the file (e.g. SP900H.DAT).

Examples:

Error Messages:

See also:

TELCOM

TELCOM

Name: TELCOM - Telecommunications program.

Synopsis: telcom

Environment: CP/M.

Description:

TELCOM is the standard MicroBee communications program.
TELCOM is described in the Telcom User's Manual.

Examples:

Error Messages:

See also:

Telcom User's Manual.

TRANSFER

TRANSFER

Name: **TRANSFER - File transfer utility.**

Synopsis: transfer

Environment: CP/M..

Description:

TRANSFER allows the user to move files between disks, the console and the printer. TRANSFER also allows files to be renamed.

The main menu of TRANSFER allows the user to select one of a number of options;

- 1 - Copy files.
- 2 - Rename a file.
- 3 - Display files.
- 4 - Print files.
- Ø - Exit to the Shell or CCP.

1. File Copying.

When the COPY screen is selected, the user may nominate the files that are to be copied by either typing in their names on the command line or by moving the file cursor over the name of the files and then hitting LINE FEED. Hitting LINE FEED again deselects the file. When the RETURN key is hit, the name of the destination is requested. For a single file copy, this may be the another file name. For multiple file copies, the destination name must be the name of another disk drive.

2. Renaming a file.

The user must enter the name of the file to be renamed. The name may be typed or entered by using the file cursor and the LINE FEED key. The new name of the file must be specified in a similar manner.

3. Display Files.

In a similar manner to COPY, any number of files may be selected for displaying. The files may be displayed continuously or one page at a time, and inverse characters may or may not be displayed. When the files are displayed, ^S stops the listing and ESC aborts the listing. In paginated mode, RETURN displays the next line in the file and SPACE displays the next screen

4. Print Files.

The PRINT screen works in very much the same way as the DISPLAY function. However, the pagination is done in terms of a standard 66 line page.

Examples.

Error Messages:

See also:

TYPE.
REN.
CP.
PIP.

TYPE

TYPE

Name: TYPE - Type a file on the console.

Synopsis: type file {p}

Environment: CCP.

Description:

TYPE is used to display text files on the console (screen). By default, TYPE paginates its display (breaks it up into pages) and halts after each page. The user may hit any key to continue the listing. If the 'P' flag is specified, then the pagination feature is disabled and TYPE does not halt after each page.

Note that the listing can be halted at any point by typing control-S. Any key will re-start the listing. The listing may be aborted by hitting control-C.

If a printer is connected to the computer, then hitting control-P before hitting the return key will cause all subsequent console output to be echoed at the printer. Hence the file will be printed. To stop the printer echo, hit control-P again.

Examples:

```
B>type fred.sub <return>
On a clear disk,
You can seek for ever....

B>_
```

Error Messages:

"No file."
The specified file does not exist.

See also:

TRANSFER.

USER

USER

Name: USER - Set default user area.

Synopsis: USER n

Environment: CCP.

Description:

USER allows the default user area to be changed when in the CCP. 'n' is a number in the range 0..15

Examples:

```
B>user 10 <return>
B10>_
```

Error Messages:

See also:

WBEE

WBEE

Name: WBEE - WordBee Text Editor.

Synopsis: WBEE {file}

Environment: CP/M.

Description:

WordBee is a very simple word processor/text editor written for the MicroBee. WordBee is described in the WordBee User's manual.

Examples.

Error Messages:

See also:

WordStar.
WordBee User's Manual.

WS

WS

Name: WS - WordStar.

Synopsis: WS {file}

Environment: CP/M.

Description:

WS is the standard MicroBee word processor/text editor. Word Star is fully described in the WordStar user's manual.

Examples:

Error Messages:

See also:

WordStar Reference Manual.
WordStar Training Guide.
WordBee.
Chapter 2.

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