PCW9512

Personal Computer Wordprocessor



User Instructions

AMSTRAD

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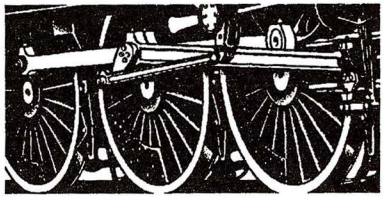
PCW 9512

USER GUIDE



LOCOMOTIVE
SOFTWARE

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Locomotive Software gratefully acknowledges the advice and assistance on the desgin of the character set given by Victor Swoboda, Research Fellow, School of Slavonic & East European Studies, University of London.

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Preface

The PCW9512 is principally a word processor, which means that its main task is to help you prepare professional-looking letters and documents. It can also be used as a general purpose computer, running a wide range of commercial software packages – accounts programs, ledgers, etc.

The software that makes the PCW9512 a word processor is Locomotive Software's LocoScript 2. LocoScript 2 guides you through the steps you need to take, not only to create documents and edit them, but also to get the best visual effect when you print them out.

It provides menus of options and facilities: you don't have to remember complicated abbreviations to get it to work. The keystrokes that will bring you the features you need are displayed as part of every screen display.

Also provided with the PCW9512 are Digital Research's CP/M operating system and two programming languages that run under this operating system – Locomotive Software's Mallard BASIC and Digital Research's Dr. Logo.

This User Guide is in three parts:

- **Part I: The PCW9512** – describes how to set up your PCW and gives general information on how to use your machine – how to switch it on, what discs you should use, how to insert these in your machine, etc.

- **Part II: LocoScript** – is a full tutorial on using your PCW9512 as a word processor

- **Part III: Using CP/M, BASIC and LOGO** – describes how to use your PCW9512 as a general purpose computer by running the CP/M Plus operating system and introduces the Mallard BASIC and Dr. Logo programming languages.

Using a wordprocessor is more difficult than using a typewriter – because there are so many more features to learn. **There is no short cut to learning LocoScript – you must study the tutorial given in Part II.**

However, you don't have to work through the whole tutorial before you can prepare letters and documents you need. Indeed, after setting up the equipment and working through the first couple of tutorial sessions (taking about half-an hour), you should be able to type in and print out a simple letter.

In that short time, you obviously won't have learnt how to use many of the features that LocoScript 2 offers, such as headers and footers, different margins and special types of paper. You will learn this as you work through the tutorial.

The tutorial has been designed to gradually build up the range of features that you can use and you can work through it a session at a time. It is divided into three stages:

- **Stage 1: Basics**
- **Stage 2: Refinements**
- **Stage 3: Advanced features**

to help you gauge how far you have progressed.

Word processing is a complex task and you can't expect to understand everything the first time. When you are having difficulty with something, often the best person to ask is simply someone else who uses LocoScript . The personal touch could well be all you need to sort your problem out.

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Chapter 1

Getting Started

Before you can start using your PCW9512 for word processing:

- Your PCW needs to be set up and ready to go with a plug on the end of its mains lead.
- The PCW printer needs to be connected to your PCW and set up ready to print on single sheets of paper. In particular, there should be a ribbon in the printer.
- Last, but not least, you need to prepare your 'Working' discs. In particular, you need to prepare 'copies' of the supplied discs – because you should only ever work with copies of these discs. If you work with the supplied discs, you run the risk of damaging them and so losing your PCW programs all together.

You will need **two** new blank discs for your 'Working' discs. These discs are not supplied with your PCW9512: ask your dealer for CF2 Compact Floppy discs. We also suggest that you buy a spare Amstrad PCW9512 Printer Ribbon Cassette.

Unpacking your PCW

The box in which your PCW9512 is supplied should contain the following:

Top layer –

one daisy-wheel printer
one Keyboard

Middle layer –

one Manual
two Master discs:
a 'LocoScript 2' disc (for use as described in Parts I and II)
a 'CP/M, BASIC and LOGO' disc (for use as described in Part III)
one Printer tractor feed unit

Bottom layer –

one PCW9512 Monitor/System Unit, with a fitted disc drive

Before you read any further, check that you have all these items.

Setting up your PCW

IMPORTANT - when choosing a position for the PCW:

- make sure that all the equipment is installed close to, and within easy access of, the electrical mains supply socket

- make sure that the equipment is NOT situated near an artificial heat source, such as a radiator, near a water supply, nor in direct sunlight. These elements can damage your PCW and destroy data.

To set up your PCW, you need to attach a plug to the end of the mains lead on the back of the Monitor Unit and to connect the Keyboard to the Monitor Unit.

1. Fitting a Mains plug safety

The PCW9512 operates from a 220 - 240Volt 50Hz A.C. mains supply and is a Class I (earthed) appliance.

WARNING: THIS APPARATUS MUST BE EARTHED

Fit a proper mains plug to the mains lead on the Monitor Unit. If a 13Amp (BS1363) plug is used, a 5Amp fuse must be fitted. The 13Amp fuse supplied in a new plug must not be used. If any other type of plug is used, a 5Amp fuse must be fitted either in the plug or in the adaptor or at the distribution board.

IMPORTANT: The wires in the mains lead are coloured in accordance with the following code:

Green-and-yellow	**: Earth**
Blue	**: Neutral**
Brown	**: Live**

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminal in your plug, proceed as follows:

The wire which is coloured **Green-and-yellow** must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol ⏚ or coloured **green** or **green-and-yellow**.

The wire which is coloured **Blue** must be connected to the terminal which is marked with the letter '**N**' or coloured **black.**

The wire which is coloured **Brown** must be connected to the terminal which is marked with the letter '**L**' or coloured **red.**

DO NOT PLUG your PCW9512 into the mains supply yet

Always obey the warning on the rating label on the back of the Monitor Unit.

WARNING! HIGH VOLTAGE

DISCONNECT FROM MAINS SUPPLY BEFORE REMOVING BACK COVER OR ANY SCREWS. SWITCH OFF WHEN LEFT UNATTENDED. DISCONNECT FROM MAINS SUPPLY WHEN NOT IN USE.

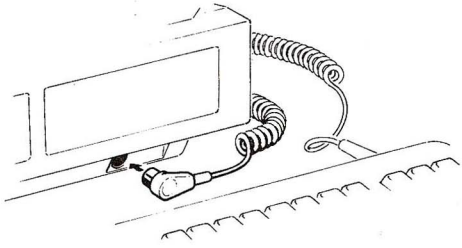
Disconnect the mains plug from the supply socket when not in use.

Do not attempt to remove any screws or to open the casing of the Monitor Unit or Printer.

2. Connecting the keyboard

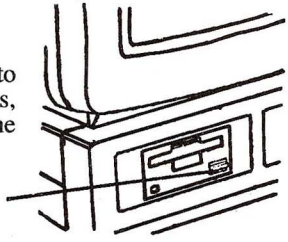
IMPORTANT: First check that your PCW is not plugged into the mains supply.

Connect the keyboard to the Monitor Unit by inserting the right-angled 4-pin DIN plug on the end of the keyboard cable into the socket on the front of the Monitor Unit. You will find the socket towards the right in the recessed area beneath the disc drive panel.



3. Removing the travel guard

A piece of cardboard has been inserted in the disc drive to guard the drive against damage in transit. To remove this, press the Eject button on the disc drive and withdraw the piece of cardboard fully.



Eject button

Setting up the printer

First check that the PCW9512 is not plugged into the mains supply.

To set up the printer, you need to unclamp the ribbon cassette and the printer carriage, and to connect the printer to the Monitor Unit.

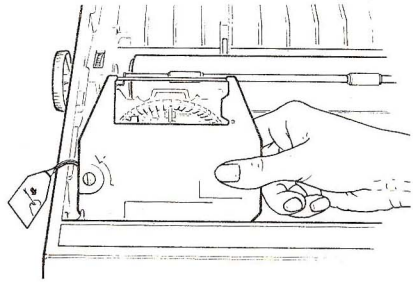
1. Unclamping the print head and the ribbon cassette

Hinge back the cover over the back section of the printer. (This second cover is the Paper Tray.)

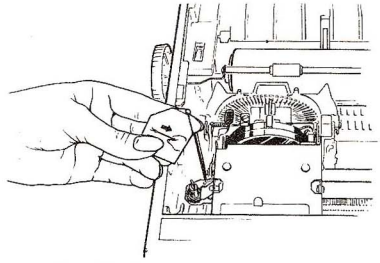
Now remove the front dust cover. This is hinged, so you will have to release it from its hinges first. This is done by opening the cover until it is vertical, and then lifting it gently upwards. The lefthand side comes straight up, but the righthand side of the cover has to be eased away from the printer casing.

Untape the paper tag from the ribbon cassette. Don't worry if the orange tab is removed as well.

Next remove the piece of polystyrene packing from between the 'ears' of the ribbon cassette. Then pull gently on the ears of the cassette, lift it out and put it to one side.



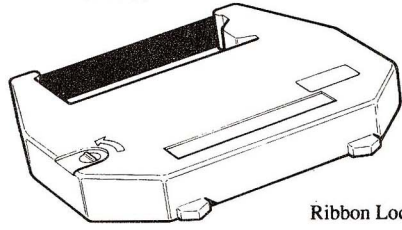
You should now have a clear view of the paper tag. This tag is attached by a plastic tie to a small clip that holds the print head at the lefthand end of the printer carriage. Pull firmly on the plastic tie to remove the clip. The print head is now unclamped.



Ribbon Feed Knob

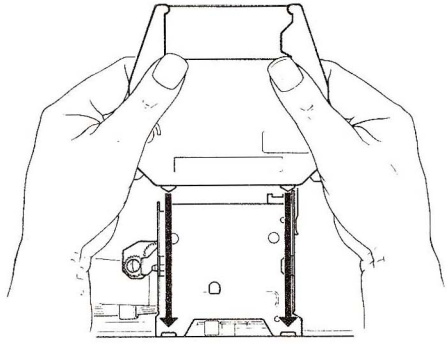
You should now re-insert the ribbon cassette as follows:

Hold the cassette with the knob uppermost and the ribbon away from you. If the orange Ribbon Lock tab to the right of the knob is still in place, pull on this so that the Ribbon Lock is completely removed.



Ribbon Lock tab

Turn the Ribbon Feed Knob gently in the direction of the arrow to take any slack out of the ribbon. Then slot the cassette into position by locating the two lugs in the edge of the cassette into the two slots in the cassette support and then pushing the cassette gently down. The two ribbon guides should ensure that the ribbon goes into the right position, in front of the guides. Be careful not to twist the ribbon.



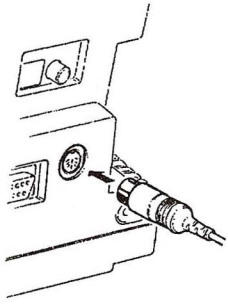
When the cassette is in place, press down gently on the cassette to ensure that it is properly located. Check that the ribbon is properly positioned in front of the print wheel and then gently turn the Ribbon Feed Knob again to remove any slack.

Now replace the dust cover. Hold the dust cover roughly vertically and engage it on its hinges – first the righthand end and then the left. When it is in place, fold it back down onto the printer.

2. Connecting the printer to the Monitor Unit

IMPORTANT: First check that your PCW is not plugged into the mains supply.

Place the printer to the right of your Monitor Unit and quite close to it. Now insert the 14-pin DIN plug connector on the printer cable into the 14-pin socket (marked 'PCW9512 Printer') on the back of the Monitor Unit.

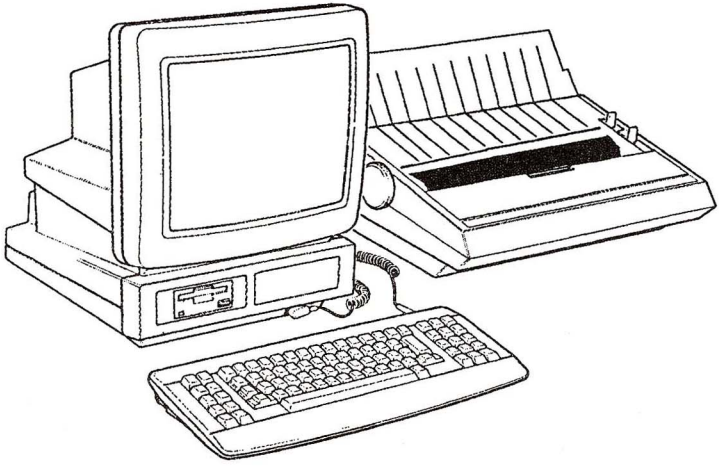


• With the Paper Tray hinged back, the printer is set up for single sheet stationery. You don't, at this stage, do anything with the printer's tractor feed unit, because this is only attached to the printer when you want to use continuous stationery (see Chapter 2).

Don't attempt to load paper into the printer at this stage.

IMPORTANT: DO NOT UNPLUG THE PRINTER WITHOUT FIRST SWITCHING OFF YOUR PCW.

Your PCW is now fully set up.

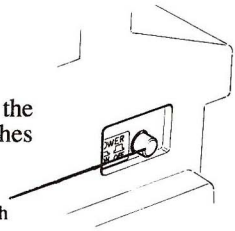


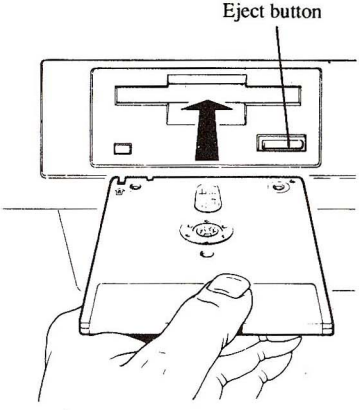
Copying the Master disc

Before you go on to use your PCW for word-processing, you must make 'copies' of the supplied 'LocoScript 2' disc. The supplied disc holds the Master copies of the programs you need to do word-processing on your PCW. You should only ever work with copies of this disc because otherwise you run the risk of damaging it and so losing your LocoScript programs altogether.

I: Loading LocoScript 2

Plug your PCW into the wall outlet and then press in the Power Switch on the back of the PCW. This switches your PCW on.





Hold the supplied 'LocoScript 2' Master disc by its labelled end with the label uppermost, and insert it in the drive slot (the lefthand drive slot if you have two).

Push the disc in until it clicks home. However, this should require no more than gentle pressure: if the drive appears to be resisting the disc, stop. Whatever you do, don't force it in.

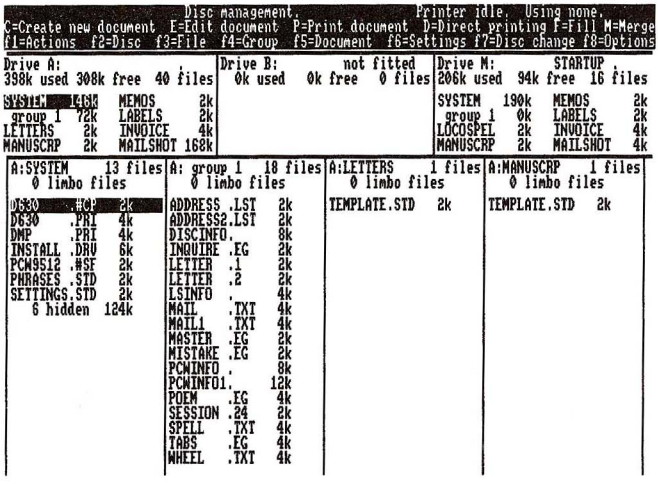
If you have problems:

- check that there isn't another disc – or anything else – in the drive
- check that you are trying to put the disc in the right way round

When the disc is inserted, the disc drive motor should automatically turn on. (You should hear a gentle whirring sound.) If it doesn't, press the Space Bar. You should now see a pattern of black and white horizontal lines on the screen as the software is read in from the disc.

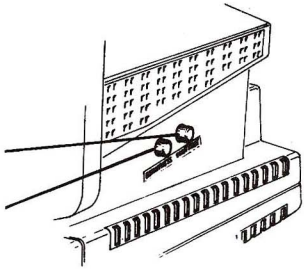
If instead, your PCW bleeps or the screen flashes, the disc is either damaged or you have inserted the wrong disc. Press the Eject button on the drive to release the disc and then withdraw it completely from the drive. Check that you inserted the disc you meant to use; then try again — by inserting the disc and, if necessary, pressing the Space Bar as above. If you continue to have problems, consult your dealer.

The pattern of horizontal lines is soon replaced by information about your copy of LocoScript 2. When the disc drive light stops flashing, you will see the following display on the screen:

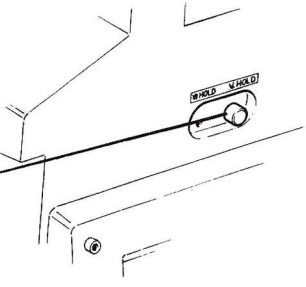


You have now loaded LocoScript 2. Press the Eject button on the drive and withdraw the LocoScript 2 disc.

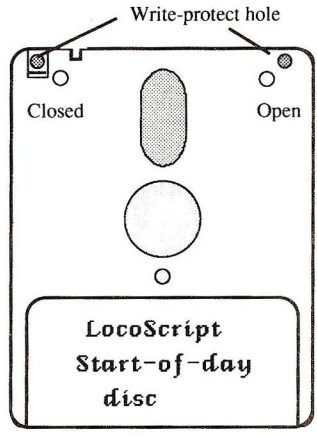
Adjust the brightness of this screen to a comfortable level by turning the Brightness and Contrast knobs on the righthand side of the Monitor Unit.



If necessary, also adjust the Vertical Hold (V-Hold) knob on the back of the unit until the display is steady and correctly positioned on the screen.



II: Copying the Master disc



Making your copy of the supplied Master disc takes about five minutes and requires one of your two new blank CF2 discs. Write 'LocoScript Start-of-day disc' on the label on Side 1 of this disc and 'Documents disc' on the label on Side 1 of your other new blank disc.

Now pick up each of the new discs in turn, hold it with the Side you have written on towards you and look at the small 'Write-protect' holes in the corners of each disc, away from the label. The hole on the left should be closed; the hole on the right should be open.

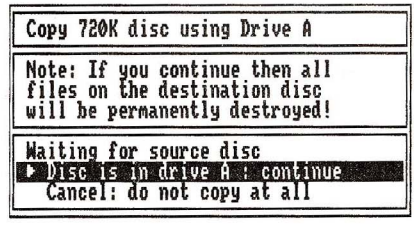
If any of these holes need adjusting, do this now. How this is done depends on the disc. Amstrad discs have a shutter arrangement, which you can close with your thumbnail. Other discs have a small lever set into the edge of the disc casing beside the hole, which can be moved with (for example) the tip of a ball point pen.

Now hold down the key marked SHIFT towards the right of the keyboard and keep this held down as you press the [f1] keyon the lefthand side of the keyboard. You will see a 'Menu' appear on the screen: this is one of LocoScript's many menus.

The option you want from this menu — `Copy disc` — is highlighted and has an arrow pointing to it, telling you that it is already selected for you — so just press the key in the bottom righthand corner of the keyboard marked [ENTER].

Note: Throughout what follows, you will see a number of messages on the screen that tell you to insert 'the Source disc' and 'the Destination disc'. 'The Source disc' is the Master disc you are making a copy of and 'the Destination disc' is the new disc you are using for the copy.

Before copying starts, LocoScript checks that you meant to select the `Copy disc` option – because if it just went straight ahead, you might accidentally copy the wrong information to the wrong disc. Press the [↓] key (next to [ENTER]) and then press [ENTER] to clear away this message. LocoScript now prompts you to insert the 'Source disc'.



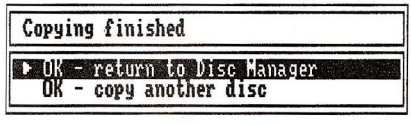
The disc we are going to copy is the LocoScript 2 Master disc, so insert this disc into the disc drive with the label uppermost: push it in gently until it clicks home. Now press [ENTER] again. LocoScript then starts copying the data on the disc into its memory, track by track. The message on the screen records its progress through a total of 160 tracks (numbered 0...159).

The process of copying the disc is usually carried out in a number of stages, each stage requiring you to first put in the 'Source disc' and then to replace this disc by the 'Destination disc'. When this is the case, the message on the screen will show `Part 1 of` *n*, where *n* is the number of stages your copy will take. This number is the number of times you will have to first put in the Master disc you are currently copying so that a section of the disc can be into the PCW's memory and then replace this disc by your new disc so that this section of the disc can be written onto it.

Soon a message will appear prompting you to insert the 'Destination disc'.

When this appears, press the Eject button on the disc drive and withdraw the LocoScript 2 Master disc: insert the disc you labelled 'LocoScript Start-of-day disc' in the drive, with Side 1 uppermost. Press [ENTER] when you are ready.

Again, a message appears on the screen counting through a number of tracks – this time, as the PCW writes on the disc. When it has written the section of the disc it had in memory, you will see the message prompting you to insert the 'Source disc' again. So release your new disc from the drive and insert the LocoScript 2 Master disc again (still with the label uppermost) and press [ENTER]. Then when you see the message prompting you to insert the 'Destination disc, release the LocoScript 2 disc and insert your LocoScript Start-of-day disc again (also still with Side 1 uppermost) and press [ENTER]. And so on until the entire disc has been copied and you see the following message:



When this message appears, remove the disc in the drive and put it to one side. Then press [ENTER]. You are now returned to the screen you saw immediately after LocoScript was loaded.

IMPORTANT: When you have made your copy, store the original discs you copied somewhere safe. This is your Master disc, only to be used to make further copies (by repeating the above procedure) if the copy you have just made becomes damaged. Always use the **copy** in your daily use of your PCW9512.

Preparing your 'Documents' disc

In addition to the copy of the supplied Master disc, you also need a 'Documents' disc – ready to store letters, etc. that you prepare using your PCW9512. For this, you need your second new blank disc (the one you labelled 'Documents disc') but before you can put this disc to use, you have to put it through a special process that marks it out electronically. This process is called 'Formatting the disc'.

Start by checking that the disc drive is empty. If there is a disc in a drive, press the Eject button on the drive and withdraw the disc.

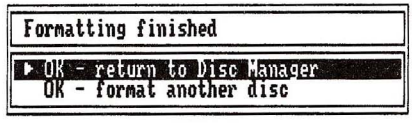
Now hold down the [SHIFT] key and press the [f1] key, exactly as you did earlier to start the process of copying the Master disc. As before this brings a menu of options onto the screen.

Press the [↓] key twice (moving both the highlighting and the arrow to `Format disc`) and then press [ENTER].

The first thing that happens is that you see a message on the screen checking that you meant to select this option. (Again, if it just went straight ahead, you might accidentally format the wrong disc and that would mean you lost everything that was stored on it.) Press [↓] key and then [ENTER] to clear away this message.

LocoScript then prompts you to insert your new disc in Drive A. Insert the new disc into the disc drive with Side 1 uppermost. Now press [ENTER] again. LocoScript then starts marking out the storage area on both sides of the disc. Again, a message on the screen records its progress through all 160 tracks. This time there is no swapping of discs in and out of the drive.

When the disc has been formatted , you will see the following message:



When this message appears, remove the disc from the drive and put it to one side. Then press [ENTER] to return to the Disc Manager.

- **You have now finished all the preparation you need to do.**

Note: The new discs you buy have labels on both sides as if you can use the two sides independently. A PCW9512 uses both sides of a disc together. As a result, you must always insert your discs with Side 1 uppermost.

Chapter 2

Using your PCW

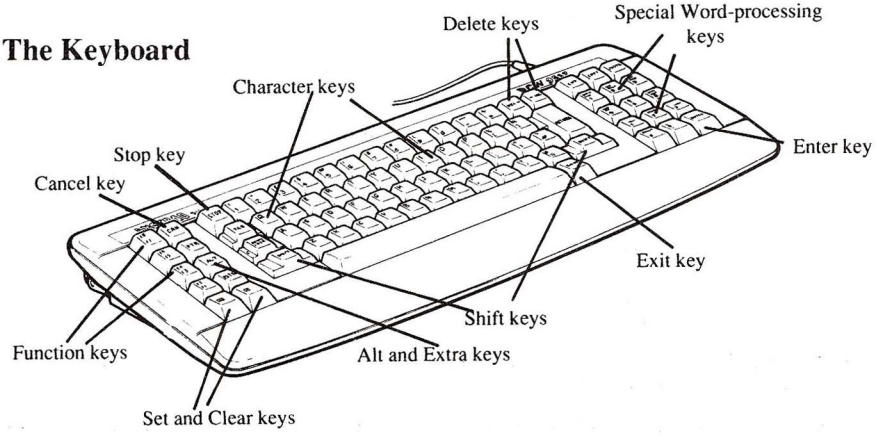
This chapter is a reference chapter in which you can quickly look up the basic actions involved in using your PCW9512 – switching on, switching off, handling discs, loading paper into the printer, putting a new ribbon into the printer, changing the print wheel, and so on.

We strongly recommend that you look through this chapter and see how all these actions are carried out (or, at least, where the details are to be found) before you start using your PCW for word-processing.

Note: If anything happens while you are using your PCW that differs in more than just detail from what is described here, turn to Appendix II at the end of this Part of the User Guide. Appendix II is the Troubleshooting section.

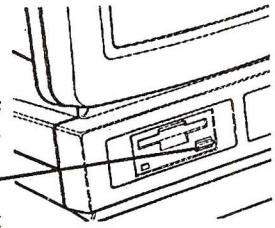
The PCW

The Keyboard



Note: The actions many of the keys have depend on what you are using your PCW for. In particular, you won't necessarily get the same result when you press a particular key when you use your PCW for word-processing (as described in Part II) as you do while you are using your PCW to run a CP/M program (as described in Part III).

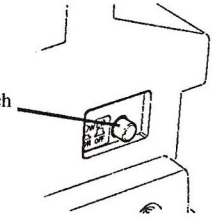
Switching on



The procedure for switching on the PCW is as follows:

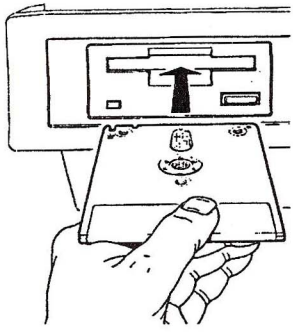
1. Press the Eject button on the drive to release any disc that is at present in your machine's floppy disc drive. Withdraw any disc from the drive.

2. Plug your machine into the Mains supply – if it is not already plugged in.



3. Press in the Power Switch on the back of your machine. This switches your PCW on. Your screen should come up bright.

4. Hold the disc holding the software you want to use (ie. the LocoScript 2 Start-of-day disc) by its labelled end with Side 1 uppermost, and insert it in the lefthand drive slot (Drive A).



Push the disc in until it clicks home. However, this should require no more than gentle pressure: if the drive appears to be resisting the disc, stop. Whatever you do, don't force it in.

If you have problems:

- check that there isn't another disc – or anything else – in the drive
- check that you are trying to put the disc in the right way round

5. When the disc is inserted, the light on the disc drive should start flashing. If it doesn't, press the Space Bar.

   You should now see a pattern of black and white horizontal lines on the screen as the software is read in from the disc.

   If instead, your PCW bleeps or the whole screen flashes, the disc is either damaged or not a Start-of-day disc. Release the disc from the drive and check that you inserted the correct disc. Then try again – by inserting the disc and, if necessary, pressing the Space Bar as above. If you still have problems, consult your dealer.

6. All the software has been read from the disc when the disc drive light stops flashing. Do not release the Start-of-day disc from the drive until the disc light stays off.

Switching off

1. Press the Eject button on the drive to release any disc that is at present in your machine's floppy disc drives. Withdraw any disc from the drive.
2. Press the Power Switch on the back of your machine. This switches your PCW off.

Wait at least 5 seconds before switching on again.

Resetting your PCW

If you or your program get very confused at any stage, the simplest answer is often to start afresh – by resetting your machine. This is essentially the same as switching it off and then on again but it causes less strain on the electronics.

Note: Any work that you have stored in memory will be erased as you do this.

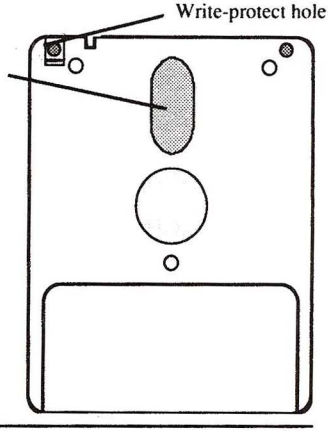
1. Place the disc holding the software you want to use (ie. the LocoScript 2 Start-of-day disc) in the drive slot (Drive A).
2. Hold down the [SHIFT] and [EXTRA] keys and keep them held down as you press [EXIT]

   The software should now be read off the disc, exactly as it is during start-up after the PCW has been switched on.
3. All the software has been read from the disc when the disc drive light stops flashing. Do not release the Start-of-day disc from the drive until the disc light stays off.

Cleaning your PCW

Use an aerosol anti-static foam cleaner to clean both the screen and the PCW's plastic case. Under no circumstances should spirit-based cleaners be used.

About discs



Discs provide you with a permanent way of storing programs and information for use by your PCW. You make information stored on the discs available to your machine by inserting the discs in the disc drive and telling your PCW to read the information into its memory. You can also instruct your PCW to record information currently in its memory on a disc – by 'saving to disc'. They are perhaps the most sensitive parts of your computer system.

The type of discs to use

Your PCW's built-in disc drive can only accept 3" Compact Floppy Discs. There are many different kinds of computer disc, so when buying spare discs or software on disc, you should always check that you are buying the right sort.

You are recommended to use Amstrad CF2 discs, but in fact labelled discs from any leading manufacturer should give good service. Avoid cheap, unlabelled discs because using these is a false economy. Not only is data transfer between discs likely to be unreliable, but in the worst case, use of such discs can damage your disc drives and so might also damage all the other discs used in these drives.

The sides of the disc are usually labelled 1 and 2 or A and B, but with a PCW9512 you only ever have to consider Side 1 or Side A. The PCW9512 automatically uses both sides of the disc for storage.

What to do with a new disc

New discs are typically supplied in boxes of ten.

Before you can use a new disc, it has to be prepared ready to have information stored on it. This preparation is called formatting and we recommend you to format all new discs you buy, as soon as you get them home, so that they will be ready for use when you want them. This formatting prepares both sides of the disc: you do not have to format the Side labelled 2 or B separately. In fact, trying to format the second side of the disc separately will destroy the formatting and any information already written on the disc. Moreover, the disc will then be marked out as if Side 2 was Side 1, causing you problems when you try to use the disc in the normal way.

Once you have formatted the disc, open the Write-protect hole on Side 2. Then you never need to worry about this side of the disc again.

Handling discs

Discs are highly sensitive – to dust, to temperature, to moisture and to magnets. So:

- Don't poke anything into the disc's casing: in particular, don't scratch the part of the disc that is exposed through the reading window.
- Don't try to force the plastic casing open.
- Don't store the discs anywhere that they could get damp or very hot or very cold.
- Don't store them anywhere near a magnet – and that includes the magnets in such pieces of equipment as your audio equipment, your telephone or your TV.
- Never put discs into your disc drives before you switch on and never turn your PCW off while there are still discs in the drives. Take the discs out first.
- Never take a disc out of a drive while your PCW is reading from it or writing to it – ie. while the disc light is either fully on or flashing on and off.

Disc capacity

A formatted disc can hold a certain amount of information. This amount is known as its Capacity and it is expressed in 'Kilobytes' or 'k'. The PCW9512 discs have a capacity of 720k – that's enough to store about three-quarters of a million characters or about 360 pages of text.

Inserting a disc in the drive

1. Release and withdraw any disc that is at present in the drive.
2. Hold the disc by its labelled end, with Side 1 uppermost.
3. Insert the disc into the drive slot until it clicks home.

   This should require no more than gentle pressure. If the drive seems to resist the disc, stop: whatever you do, don't force it. Press the Eject button on the drive in case there is a disc already in the drive. If you can't find out what the trouble is, consult your dealer.

IMPORTANT: Always ensure that you have Side 1 uppermost when you insert a PCW9512 (720k) disc.

Removing a disc from a drive

1. Check that the disc light is fully off. When this light is fully off, your PCW isn't either reading or writing to the disc.
2. Press the Eject button on the drive. This releases the disc and partly ejects it from the drive.
3. Withdraw the disc the rest of the way.

Write-protecting a disc

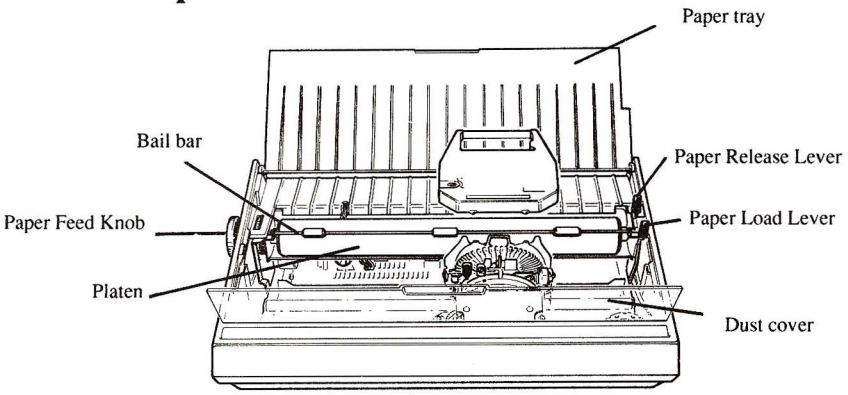
With the Write-protect hole on Side 1 of the disc closed, data can be written to that disc. With the hole open, attempts to write to the disc will only generate an error message telling you that the disc is write-protected.

1. Turn the disc so that Side 1 is towards you and its labelled end is down.
2. Open the hole in the top left corner of the disc.

The method used to open (and close) the hole varies from disc manufacturer to disc manufacturer. Amstrad discs have a shutter arrangement that can be opened and closed with your thumbnail. Others have a small lever, set into the edge of the disc casing beside the hole, which can be moved with (for example) the tip of a ball point pen.

Important: The Write-protect hole on Side 2 of PCW9512 (720k) discs should be kept open at all times.

The PCW printer



Paper for the printer

The printer will handle ordinary bond paper provided it is not too flimsy (less than 0.08mm thick – 53 gsm) or too stiff (more than 0.1mm thick – 82 gsm). It can also handle up to three sheets of copy paper (40gsm) at the same time as a top copy on bond paper is being printed.

Any size of paper can be used, up to 15.5" wide.

Autoloading a single sheet of paper

The printer is set up so that paper resting in the paper tray can be automatically fed into the printer and left so that printing will begin in the correct position.

1. Place the sheet of paper in the paper tray so that its top edge rests against the back of the printer platen (the rubber roller).

   Align the lefthand edge of the paper with the third rib of the paper tray.

2. Pull the Paper Load Lever fully forward and then let it go back to its 'half-way' position. The printer should now feed the paper in.

   The paper should be left in approximately the right place for printing.

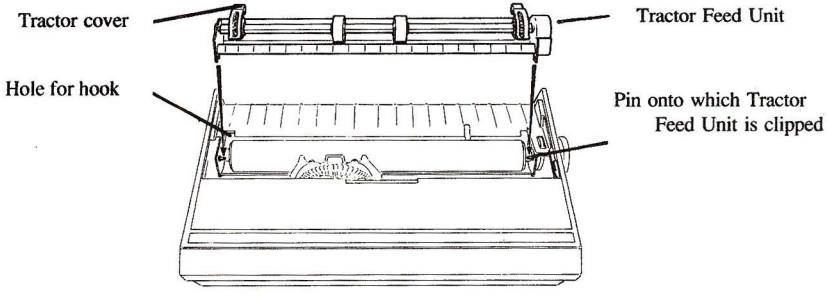
3. Push the Paper Load Lever right back to its original position, putting the bail bar back against the platen.

4. Pull the Paper Release Lever forward and adjust the position of the paper by easing it along/around the platen.
5. When you have finished adjusting the paper, push the Paper Release Lever back.

   You can change how the printer is set-up at this stage. For example, you can now change the print start position. For details, see the section on Printing – in Part II when you are using your PCW for word-processing, or in Part III when you are using it to run CP/M programs.
6. Press [EXIT].

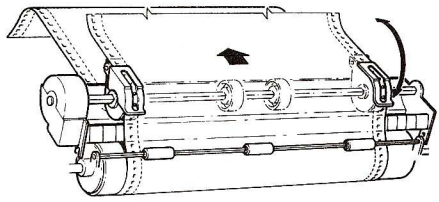
Setting up the printer to use continuous stationery

1. Hold the tractor feed unit with the ridged edge of the unit towards you. Lower the unit so that the two small hooks at the back of the unit fit into the two small holes (just behind the platen) on the top of the printer. Then clip the front of the tractor feed down into position. The two clips fit over the two pins sticking out of the casing, at either end of the platen.



2. Feed the paper from behind the back of the tractor unit as if it were single sheet stationery (ie. rest the top edge against the back of the platen and then pull the Paper Load Lever fully forward so that the paper feeds in).
3. Push the Paper Load Lever back to its original position and then turn the Paper Feed Knob so that the paper is fed through a further few inches.
4. Pull the Paper Release Lever forward and leave it forward.
5. Open the tractor covers and adjust the position of the paper (and, if necessary, the position of the tractors themselves) so that the sprocket holes on the paper fit over the tractor cogs. The paper should be straight.

   The tractor covers lift straight up: they are hinged at the back.



6. Close the tractor covers over the paper.
7. Turn the Paper Feed Knob until the print position is approximately $^1/_6$" below the next line of perforations.

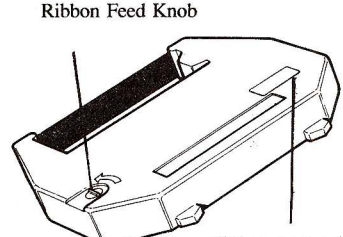
   You can change how the printer is set-up at this stage. For example, you can now change the print start position. For details, see the section on Printing – in Part II when you are using your PCW for word-processing, or in Part III when you are using it to run CP/M programs.
8. When you have finished adjusting the paper, press [EXIT].

Note: In some circumstances it may be more convenient to remove the paper tray. Do this before fitting the tractor feed by hinging it forward until it is horizontal and then lifting it off. The lefthand side comes straight up, but the righthand side of the tray has to be eased away from the printer casing.

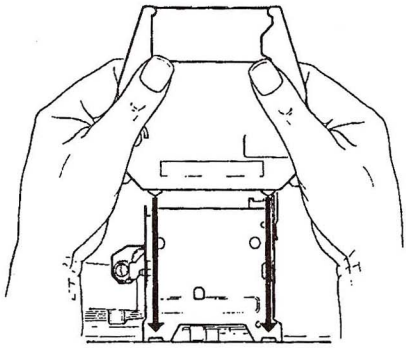
Changing the ribbon

Note: When you buy a printer ribbon, you should ask for an Amstrad PCW9512 Ribbon Cassette.

1. Lift the dust cover up gently. It is hinged, so you need to release it from its hinges.
2. Lift the old ribbon cassette out.
3. Hold the new ribbon cassette with the knob uppermost and the ribbon away from you. Pull the Ribbon Lock tab and remove the Ribbon Lock.
4. Turn the Ribbon Feed Knob gently in the direction of the arrow to remove any slack in the ribbon.



5. Slot the cassette into position, by locating the two lugs in the edge of the cassette into the two slots in the cassette support. The two ribbon guides should ensure that the ribbon goes into the right position, in front of the guides. Be careful not to twist the ribbon.

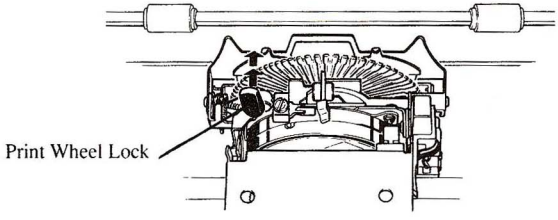


6. Press down gently on the cassette so that it is properly located. Check that the ribbon is properly positioned in front of the print head and remove any slack in the ribbon by gently turning the Ribbon Feed Knob.

7. Replace the dust cover. Hold the dust cover roughly vertically and engage it on its hinges – first the righthand end and then the left. When it is in place, fold it back down onto the printer.

Changing the print wheel

1. Lift the dust cover up gently. It is hinged, so you need to release it from its hinges.
2. Lift the ribbon cassette out.
3. Pull the lever of the Print Wheel Lock towards you.



4. Lift out the print wheel you have been using. Slot in the new print wheel in its place.

   You just have to drop the print wheel into the slot: you don't have to locate it on anything – or arrange that a particular character on the print wheel is in a particular place.

5. Push the Print Wheel Lock firmly forward. If you only push it lightly, you may hear a click but the print wheel won't have engaged properly.
6. Replace the ribbon cassette as described above.
7. Replace the dust cover. Hold the dust cover roughly vertically and engage it on its hinges – first the righthand end and then the left. When it is in place, fold it back down onto the printer.
8. Set up your software for this new wheel.

   How to do this when you are using your PCW for word-processing is described in Part II, Session 23. The instructions you need when you are using your PCW as a general purpose computer are in Part III, Appendix II.

- The other adjustment you may want to make to the printer is to the strength with which characters are printed. This is done by the software running on your PCW: for details see the section on Printing – in Part II when you are using your PCW for word-processing, or in Part III when you are using it to run CP/M programs.

Appendix I

Expanding your PCW

As you build up the range of tasks you use your PCW for, you may well want to expand your PCW9512 system by

- adding another printer
- adding a communications link
- adding an extra disc drive

This appendix explains what you should buy and, where appropriate, how to fit it to your system. You don't need to read it before starting to use your PCW: just go straight to Part II (page 33).

Adding another printer

You are by no means restricted to using the supplied printer with your PCW9512, whether you are using your PCW for word-processing or using it as a general-purpose computer. If you already have a printer, the chances are that you will be able to use this printer with your PCW9512. What will determine its usability is:

- whether you can physically connect the printer to your PCW9512
- whether suitable 'Printer files' (Device drivers) are available

Your dealer should be able to advise you on this.

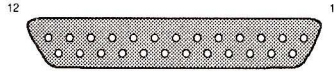
Choosing a printer

You have a very wide choice of printers that can be used with your PCW9512, but it is only fair to point out that you will get a wide range of results from these printers. Printers vary greatly in the range of characters and the range of character pitches and text emphases (bold, italic, etc.) they can produce. Even dot-matrix and laser printers, which can handle a much wider range of characters and character styles than a daisy-wheel printer, won't necessarily be able to produce all the characters and character styles that you want. In particular, opting for NLQ (High Quality) on many dot-matrix printers limits you to fixed pitch characters and few if any print styles.

If you plan to buy an alternative printer for your PCW9512 system, then we would recommend that you choose one that is compatible with either the Epson-80 printer – for example, the Amstrad DMP range of dot-matrix printers – or the Diablo 630 daisy-wheel printer. (**Note:** With the DMP printers, you must select the FX-80 Character Set, **not** the IBM. refer to their User instructions for details of the DIP switch settings.)

Attaching the printer to the PCW9512

Almost all the printers you might buy for your PCW9512 system use the parallel (Centronics) interface. This means that they can be connected via the Parallel Printer connector on the back of the Monitor Unit. This provides a standard parallel (Centronics) interface and so can be used to connect any printer that uses a standard parallel interface.



PARALLEL PRINTER

If you or your dealer are not sure whether a printer uses a suitable interface, compare the pin-out given for the printer with the pin-out given below.

Computer Connector Pin	Printer Connector Pin	Return Pin	Designation	I/O	Notes
1	1	19	STROBE	OUT	*Note 1*
2	2	20	DATA 0 (LSB)		
3	3	21	DATA 1		
4	4	22	DATA 2		
5	5	23	DATA 3	OUT	*Note 2*
6	6	24	DATA 4		
7	7	25	DATA 5		
8	8	26	DATA 6		
9	9	27	DATA 7 (MSB)		
10	10	28	ACKNOWLEDGE	IN	*Note 3*
11	11	29	BUSY	IN	*Note 4*
12	12	30	PE	IN	*Note 5*
13	13	–	SELECT	IN	*Note 6*
14	14	–	AUTOFEED	OUT	*Note 7*
–	15	–	NC		Not used.

Note 1. The signal level is normally high; it is taken low to send data. The pulse width must be more than 0.5µs at the receiving terminal (ie. your printer).
Note 2. 8-bit data signal. Pin taken high corresponds to logical 1; pin taken low corresponds to logical 0.
Note 3. Pin taken low to indicate that your printer is ready to receive further data. Approximately 0.5µs pulse.
Note 4. Pin taken high to indicate that your printer cannot receive data.
Note 5. Pin taken high to indicate that your printer is out of paper.
Note 6. Pin taken high to indicate on-line; pin taken low to indicate off-line.
Note 7. Pin low means paper to be fed one line after printing.

Computer Connector Pin	Printer Connector Pin	Return Pin	Designation	I/O	Notes
–	16	–	0V		Logic GND.
–	17	–	CHASSIS GND		Printer chassis GND.
18	18	–	NC		Not used.
19...25	19...25	–	GND		Twisted-pair
–	26...30				Return signal GND.
–	34	–	NC		Not used.
16	31	–	INIT	OUT	*Note 8*
15	32	–	ERROR	IN	*Note 9*
–	33	–	GND		Twisted-pair Return signal GND.
–	34	–	NC		Not used.
–	35	–	5V		*Note 10*
17	35	–	SLCT IN	OUT	*Note 11*

Note 8. Pin normally high; pin taken low to reset printer controller to its initial state and clear the printer buffer. Pulse width must be greater than 0.5µs at receiving terminal (ie. your printer).
Note 9. Pin taken low to indicate printer out of paper; off-line or in an error state.
Note 10. Pulled up to +5V through a 4.7kΩ resistance.
Note 11. Data entry to printer only possible when pin low. Pin taken high to indicate printer off-line.

To make the connection between the printer and your PCW, you will also need a printer cable. This cable should have a plug on one end to fit the connector on your PCW.

The Amstrad PC-compatible DMP dot-matrix printers are all supplied with the correct printer cable. Your dealer should be able to advise you on which cable to use with any other printer you may buy.

The 25-pin connector on the end of this cable should be plugged onto the Parallel Printer connector on the back of the Monitor Unit and the other end onto the equivalent connector on the printer. If the plug on the end of the lead has slots for screws, use the screws supplied with the lead to attach it securely to the Parallel Printer connector. Look at the printer's own manual to see how it recommends securing the lead to the printer.

- If your printer only has a Serial interface, then you will have to connect it via a Serial interface unit attached to the Expansion slot on the back of the Monitor Unit. See 'Adding a Serial Interface' below.

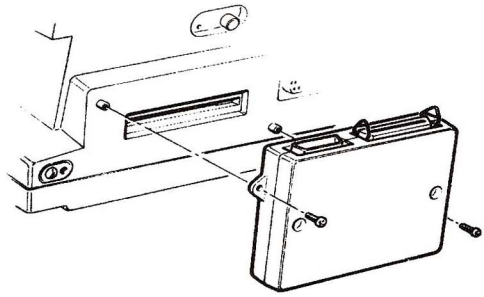
Adding a communications link

The CP/M disc contains a program called MAIL232 which can be run under the CP/M operating system to enable you to communicate with electronic mail services and to emulate a terminal connected to other computers. To make use of this, you need to give your PCW a Serial Interface, so that you can connect it to a suitable modem. This interface can also be used to connect a printer that uses a Serial interface to your PCW.

Adding a Serial Interface

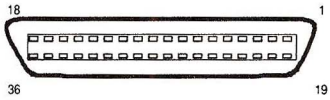
A suitable interface is provided by the Amstrad CPS8256 Serial/Parallel Interface. This can be connected to the Expansion slot on the back of the Monitor Unit to provide a standard RS232C interface, and can then be used to connect any communications link or printer that uses the standard RS232C serial interface. It is also possible to connect devices which conform to the alternative RS423 standard.

First check that the PCW9512 is not plugged into the mains supply. Then attach the CPS8256 interface to the PCW by pushing it onto the connector plug marked EXPANSION at the back of the Monitor Unit, making sure that the serial and parallel connectors point upwards. The CPS8256 can then be secured by two fixing screws. **This must NOT be done while the PCW is switched on.**



Full details of this interface and how to use the MAIL232 program are given in the CPS8256 manual, but if you or your dealer just want to check whether a printer or modem uses a suitable interface, compare the pin-out given for the printer with the pin-out given opposite.

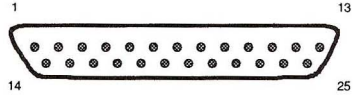
Parallel/Centronics Socket



PIN 1	STROBE	PIN 19	GND
PIN 2	D0	PIN 20	GND
PIN 3	D1	PIN 21	GND
PIN 4	D2	PIN 22	GND
PIN 5	D3	PIN 23	GND
PIN 6	D4	PIN 24	GND
PIN 7	D5	PIN 25	GND
PIN 8	D6	PIN 26	GND
PIN 9	D7	PIN 27	GND
PIN 11	BUSY	PIN 28	GND
PIN 16	GND	PIN 33	GND

ALL OTHER PINS NOT CONNECTED

Serial/RS232C Plug



PIN 2	DATA OUT (TXT)
PIN 3	DATA IN (RXD)
PIN 4	RTS OUT
PIN 5	CTS IN
PIN 7	GND
PIN 8	DCD IN
PIN 20	DTR
PIN 22	RING IND. IN

ALL OTHER PINS NOT CONNECTED

You will also need a cable to connect between the printer or modem and the interface. Again full details are given in the CPS8256 manual.

Adding an extra disc drive

You may well want at some stage to expand your system to have two floppy disc drives. **HOWEVER, SUCH MODIFICATIONS MAY ONLY BE CARRIED OUT BY AUTHORISED PERSONS: ANY MODIFICATION BY UNAUTHORISED PERSONS INVALIDATES THE AMSTRAD GUARANTEE.**

Again, your dealer should be able to tell you the names of organisations that are authorised to add further disc drives to your PCW9512. If, however, he is unable to help you, you can get this information by writing to AMSTRAD Customer Services at the address given in the front of this User Guide.

The second disc drive to be fitted to a PCW9512 is a disc drive model FD4. The dealer you originally purchased the PCW9512 from (or any PCW dealer for that matter) should be able to arrange to have the unit fitted to your machine.

Using a second disc drive

Having a second drive will not only give you the obvious advantage of having twice as much storage available (1,440K – that's almost 1½ million characters or about 720 pages of A4), but will also ease the process of copying files and discs.

Many CP/M data processing packages will benefit from having two separate drives, it should be possible to keep the program or suite of programs on one drive and use the second drive solely for the storage of associated data.

For example, in the case of a stock control program it would not be necessary to keep a copy of the program on the each disc that you use to hold the files containing the details of all your stock lines. Instead the program could be kept on a disc in Drive A and the data files on discs used in Drive B. This has the advantage of freeing more space on the data discs (which was previously occupied by the program) and this may now be used to increase the size of the data files.

Using Locoscript with two drives

Almost everything that is said in Part II of this User Guide about the use of Drive A and Drive M applies equally well to Drive B. Indeed whenever the use of Drive B would be different this is pointed out. However, to summarise, changes that you may notice are:

- The middle panel of the Disc Manager Screen describing Drive B no longer says 'not fitted' but will instead show either 'empty' or the name of the disc inserted in Drive B
- As you move the File cursor from a group on Drive A to a group on Drive M the files on the disc in Drive B (if any) will be listed in between as the screen scrolls from right to left.
- When copying discs it is no longer necessary to repeatedly swap between the 'source' and 'destination' discs in Drive A. Instead the 'source' disc can be placed in Drive B and the 'destination' disc in Drive A, and once you have started the copying process no further intervention is needed.
- In order to copy documents from one disc to another it is no longer necessary to copy them temporarily to Drive M, and then back to Drive A after changing discs. Instead the 'source' disc can be placed in one drive (A: or B:) and the 'destination' disc in the other. Then the f3 File menu can be called up either to copy or to move the file(s).
- If you are working on a disc in Drive A and the 'Disc full' alert is produced, rather than move files from the full disc in A: to M: (which runs the risk of them being lost if there happened to be a power cut while they were there), the files can be moved to B:. Drive B is a much safer storage place than Drive M.

Using CP/M Plus with two drives

When CP/M is first loaded you will notice that the second line of information printed now says '2 disc drives' after '61K TPA'. You don't have to do anything to 'tell' CP/M that a second drive has been fitted. As this message shows, it automatically 'knows'.

Many pieces of application software (spread sheets, databases, etc.) will benefit from having two drives available. However it may be necessary to make them aware of the fact during their installation process. Hopefully the manual for such a product will explain how to do this. If in doubt ask the dealer you purchased the piece of software from.

DISCKIT

If you use DISCKIT (rather than Locoscript) to copy/format discs you may notice that when the program is started it now displays the message 'Two drives found' and will ask you to remove discs from both drives before you can continue.

When you choose the f1/f2–Verify option, a new screen will appear asking you which drive holds the disc you want to verify. Press [f3] for Drive A or [f1] for Drive B and then continue as normal.

When you choose the f3/f4–Format option, a new screen will appear asking you which drive holds the disc you want to format. Press [f3] for Drive A or [f1] for Drive B and then continue as normal.

When you choose the f5/f6–Copy option, a new screen will appear asking you which drive holds the disc you want to copy from. Press [f3] for Drive A or [f1] for Drive B. This is then followed by an almost identical screen which asks which drive you want to copy to. It is possible to copy from A: to A: or from B: to B: but this will involve several disc swaps having to be made. It is probably better to choose to copy from A: to B: or from B: to A:.

Logical/Physical drives

If you have been using CP/M on a single drive system, you may be aware that the single physical drive could be made to appear to CP/M as either A: or B:. So when you used a PIP command such as:

```
PIP B:=A:SETKEYS.COM
```

a message would appear on the bottom status line saying 'Please put the disc for B: into the drive and then press any key' when PIP was ready to write out a new copy of the SETKEYS file. The message at the righthand end of the status line then told you which drive CP/M 'thought' the physical drive was ('Drive is A:' or 'Drive is B:').

With a 'real' Drive B: fitted this process no longer happens. If you try the above command, CP/M will read the SETKEYS.COM file from the lefthand drive (Drive

A) and attempt to write it to the righthand drive (Drive B). If you had not put a disc in B: it would print the warning message on the status line 'B: drive not ready - Retry, Ignore or Cancel?'.

Copying files

As described in Part III (and illustrated in the above example), files can be copied in CP/M using the PIP utility. For example, to copy a file called 'KEYS.WP' from one disc to another you could put the disc that presently contains the file in A: (the lefthand drive, remember) and the disc you want to copy it onto in B: then use the CP/M command:

```
PIP B:=A:KEYS.WP
```

(Remember that PIP is a utility, not a built-in CP/M command, so PIP.COM must be on the default drive – or one of the discs in the search path set by SETDEF).

PIP can be used with wildcards (* or ?) in order to copy a group of files with just one command. For example, to copy all the utility command files from the disc in Drive B to the Memory drive you could use:

```
PIP M:=B:*.COM
```

In the above example, you wouldn't need to put the 'B:' in front of the '*.COM' if B: was the default drive. The default drive is the one that CP/M looks at if you don't specifically mention a drive letter in a file specification. It is shown as the letter in the CP/M command prompt (the 'A>' when you first start CP/M means Drive A is the default drive). You can make any drive (A:, B: or M:) the default drive by typing the drive letter and a colon followed by return. So:

```
B:
```

will make Drive B the default and the prompt will change to B>.

All the CP/M utilities or commands that involve usage of discs can be used just as easily for Drive B as for Drive A (or M). For example, to find out what files are on a disc in Drive B use:

`DIR B:` (just as you might have used `DIR A:` or `DIR M:`)

Similarly, files on Drive B can be erased or renamed just as easily (though remember that you cannot change drives in a rename command:

```
REN A:FRED=B:ERIC
```

will not work but will print `B:ERIC?` instead). To find out how much space there is on Drive B: use the command:

```
SHOW B:
```

The above are examples of only a few of the CP/M commands being used with Drive B, but as you will find, CP/M treats B: just like A: and M:.

Appendix II

Troubleshooting

This appendix looks at what to do and what might have gone wrong when your system doesn't work in the way you expect. If you can't find the solution to your problem here, look at the equivalent appendices in Part II and Part III to see if the problem you are experiencing is described there. If you still can't understand what happened, consult your dealer.

I: Trouble with the machine as a whole

• The screen doesn't come up bright after you switch on

Check that the mains socket you are using is working by plugging in and switching on a lamp that you know is working.

Check that the PCW's mains plug is wired correctly and that the fuse hasn't blown.

If neither of these actions show you where the problem is, consult your dealer.

• The screen goes blank or your machine seems 'dead'

Remove the disc(s) from the drive(s). Then try resetting your machine by holding down [SHIFT] and [EXTRA] and pressing [EXIT]. If this doesn't bring your PCW back to life, switch off, wait a few seconds and then switch on again.

Reload LocoScript 2 or CP/M (whichever you were using before) and then repeat what you were doing when the problem happened. The chances are that it won't happen again, but if it does, consult your dealer – or if you were using either LocoScript or one of the supplied utilities, write giving full details to Amstrad Customer Services (the address is given at the front of this User Guide).

II: Trouble using the disc drive

• You can't insert your disc in the drive

Press the Eject button on the drive — to release any disc already in the drive. If this doesn't solve the problem, check that there isn't anything else in the drive — for example, a piece of cardboard. (If your machine or your disc drive is new, you may have forgotten to take the piece of cardboard packing out of the disc drive.)

Check that you were trying to insert the disc the right way round.

If you still can't insert the disc, consult your dealer — whatever you do, don't force the disc into the drive. You will only succeed in damaging the drive.

• You can't release the disc from the drive

Consult your dealer — don't try poking anything into the drive to 'help' release the disc.

• You insert a disc in the drive and a message appears telling you that the disc is unformatted

The disc either:

- is completely blank; or
- was intended for use on a different computer system
- has been corrupted
- has been inserted with Side 2 uppermost, rather than Side 1 uppermost

Release the disc from the drive and check that you inserted the correct disc and that you inserted it with Side 1 uppermost. If the disc you inserted was, indeed, a blank disc, format it.

Note: If you come to the conclusion that the disc has been corrupted, try to 'rescue' all the files you can from it by copying these to a different disc before re-formatting the disc. Formatting a disc destroys any data that is currently stored on it.

• Trying to read a file or edit a document gives you a 'Disc read' error

You have probably inserted the disc the wrong way up. Check that you have inserted the disc with Side 1 uppermost.

III: Trouble during Start-up or while resetting your PCW

• The PCW just bleeps or the screen flashes

The disc in Drive A either:

- isn't a PCW9512 Start-up disc; or
- has been damaged; or
- isn't suitable for your computer

Check that you inserted the right disc and then reset your machine. If it bleeps again, try using your Master copy of this Start-up disc. If this fails too, consult your dealer.

Important: You must always use a Start-up disc that has been prepared for use in the PCW9512. Start-up discs that were prepared for use in the PCW8256, PCW8512 or CPC6128 machines cannot be used.

IV Trouble using the printer

• The built-in printer doesn't start to print

First check that the dust cover at the front of the printer is down and there is paper in the printer. If there isn't, load a sheet of paper and press [EXIT]: the printer will probably start printing now.

If this doesn't solve the problem, press [PTR] to put your PCW into Printer Control State and see if the printer is waiting for paper or otherwise currently suspended. Turn to the section on Printing in the appropriate part of this User Guide (Part II if you are using LocoScript; Part III if you are using the CP/M operating system) to see how to put the printer on-line. Press [EXIT] to leave Printer Control State.

If the printer still doesn't print, consult your dealer.

• Your alternative printer doesn't start to print

First check that there is paper in the printer. If there isn't, load a sheet of paper and press [EXIT]: the printer will probably start printing now.

If this doesn't solve the problem, check that the printer is on-line. Details of how to check this will be given in the printer's own manual.

If the printer still doesn't print, consult your dealer.

• The printer appears to work but nothing is printed

Check that you have a ribbon in the printer.

• The printer prints rubbish

You have haven't set up your software correctly for the printer and the print wheel you are using. If you are printing on the built-in printer, press [PTR] so that the printer stops printing as soon as possible. Then use the Printer Control State functions or fit the correct printwheel, to correct the problem. Look for details in Part II if you are using LocoScript or in Part III if you are using a CP/M program.

If you are using another printer, do whatever is necessary to put the printer off-line and then correct the problem. Details of how to do this should be given in the printer's own manual.

• The paper jams in the printer

If you are printing on the built-in printer, press [PTR] so that the printer stops printing as soon as possible. (Unfortunately, if the printer keeps a large store of characters to print, this may take a while!). If you are using another printer, do whatever is necessary to put the printer off-line. Details of how to do this should be given in the printer's own manual.

Clear out the damaged paper and reload with fresh paper. Depending on the software you are using, you may then be able to start printing again. The manual that describes this software will tell you if this is the case.

• The printer suddenly stops printing

You have reached the end of the printer ribbon and the PCW has 'frozen' so that you don't loose any of your text. Replace the printer ribbon with a new ribbon cassette and press [EXIT]. Printing will then continue.

• The printer does not auto-load

Check that the Paper Release Lever has been pushed back. If this lever was left forward after you loaded the last sheet of paper, the printer won't be able to grip the new sheet of paper firmly enough to feed it in.

Part II
LocoScript

Introduction

With an Amstrad PCW9512 and Locomotive Software's LocoScript 2 you get a complete word-processing system. The PCW itself is a computer, designed to manipulate data of whatever type you like. LocoScript 2 is a special type of computer program called a word processor that takes all the actions that the computer does well and puts these to work in producing professional-looking documents.

If you have used the earlier version of LocoScript (supplied on the PCW8256 and 8512 machines), LocoScript 2's use of menus and keystrokes and the layout of the screen will all seem very familiar to you. LocoScript 2 is essentially the earlier LocoScript with a number of new features – but also with some important differences. Changes were inevitable to accommodate the new facilities, even to the LocoScript documents themselves. We explain how to convert LocoScript '1' documents – and yourselves – to LocoScript 2 in a special appendix to this part of the PCW9512 User Guide (Appendix I).

What is word processing?

Word processing, like typing at a typewriter, is all about preparing documents. However, there the similarity stops because, in word processing, you type your letter, article or whatever at the keyboard and this goes into your computer's memory, rather than straight onto a piece of paper. (The computer displays what it has in its memory on the screen so that you can see what you are doing.) Then later, you ask the computer to print out on paper the text you have typed in.

Why is this better? Well, imagine writing a letter. Almost inevitably, you will make a spelling mistake or change your mind about what you want to write somewhere along the line. Changing the data held in memory is something that computers are good at – so while your text is in your computer's memory, you can correct and revise it at will. When you come to print, you get a copy of the version that is currently in your computer's memory – a perfect 'clean' letter. Doing the same revision on a typewriter would involve lots of wasted paper and, more importantly, lots of re-typing – and, potentially, yet more mistakes.

In addition to this, while a typewriter only works with text characters which it processes one by one, LocoScript 2 also works with some special codes, which it uses to control how the text appears when it is printed – where the margins are, what type of characters are used, how far the lines of text are apart, etc. etc. So if you wanted your address at the top of the letter to be over to the righthand side of the page, you put in codes that say that this text should be at the righthand side of the page. Similarly, if you want to have 'Yours sincerely' centred at the bottom of the letter, then you put in a code that says that this is what you want. There's no need for you to work out the number of spaces you would need to type in order to get the text in the right position – you get the computer to do that arithmetic for you. These 'word-processing' codes can be revised at will, just like the text itself.

When you come to larger or more complicated documents, you may well want to make larger changes to the text – perhaps moving whole sections of text from one place in the document to another. This is no problem because, once again, this is something that computers do well. Alternatively, you might want each page to be numbered and to have some special text at the top and/or the bottom of the page. Special codes in LocoScript 2 arrange this, too.

There are lots of other jobs that you will want your word-processor to help you with. If you are a Secretary of a club, then you will want your word-processor to help you circulate details of forthcoming events or copies of the club newsletter to members. Or if you are preparing a report on something, then you will probably have one or more tables to prepare. Or you might have some sales literature to produce, which you want to lay out and style really nicely.

With LocoScript 2, there's essentially endless scope for revising and styling your text – so much so that you might get so carried away with producing the perfect document that you never actually get around to printing it!

Moreover, because you can save your work on disc any time you like:

1 You can start and stop work on a document at will; you don't have to finish somewhere that is easy to carry on from – like the bottom of a page – as on a typewriter.
2 You can make copies of the document stored on disc – making it very easy to produce similar but different versions of the same document with very little extra effort.

LocoScript 2

LocoScript 2 is a very powerful word processor, providing a very wide range of word-processing 'tools' so that you can:

- prepare all sorts of documents – letters, contracts, invoices – very easily
- prepare tables
- centre headings; put addresses over to the righthand side of the page
- take pieces of text from one document and put them in another
- put special text at the top and the bottom of each page
- have 'letter-head' documents with your address etc. ready set up in them
- link the chapters of a book together
- put in page numbers, etc. etc.
- use different printers for your documents

And working alongside the word processor you have LocoSpell and LocoMail, a couple of 'add-on' programs which, on the PCW9512, are fully integrated with LocoScript 2.

LocoSpell checks your documents for spelling mistakes and brings to your attention any word that it can't find in its spelling lists. It also suggests a word that you may have meant to type and, as a side-line, counts the number of words in your document for you.

LocoMail lets you set up standard letters, invoices etc. and then helps you fill these out – both from the keyboard and from address lists and other records that you have stored on disc. It even helps you with working out such things as totals and the amount of VAT due – arithmetic is something else that computers are very good at!

At every stage, LocoScript 2 guides you through the steps you need, not only to create documents and edit them, but also to get the best visual effect when you print them out. You don't have to remember complicated 'spells' to get it to work: there are menus of options and facilities to choose from and the keystrokes that will bring you the options you want are shown on every screen display. When you are more experienced, you may find these menus are a bit slow and cumbersome – so LocoScript 2 also provides some short cuts.

Learning to use LocoScript 2

LocoScript 2 provides a very wide range of word-processing facilities for you to use. But this doesn't mean that LocoScript 2 is difficult to master or that you have a lot to learn before you can prepare and print your first word-processed letter. In fact, this is one of the very first things we show you how to do in the Tutorial that makes up most of this part of the User Guide.

The best way to learn how to use a word processor is through practice, and that is what the Tutorial provides – taking you through the different tasks you use LocoScript 2 for, starting with the ones that you will use every day. If you have used the earlier version of LocoScript (LocoScript '1'), you will already be familiar with LocoScript's screens and menus and so you won't need to study the Tutorial in quite such detail. However, there are a number of differences between LocoScript '1' and LocoScript 2 – so you do have some new things to learn. What these differences are and the parts of the Tutorial that cover them are explained in the appendix on Converting to LocoScript 2, which follows the Tutorial. This appendix also explains what you need to do to use a 'LocoScript 1' document with LocoScript 2.

Throughout the Tutorial, we shall be taking advantage of the fact that you don't need to worry about such things as the size and style of the characters you will be using, the length of the page, the margins etc. You may well want to change some of these settings to suit the particular job you want to do – and later we show you how to do this – but, as you will see, you can achieve a great deal without ever touching them!

LocoScript Tutorial

The tutorial that follows is in three Stages, each of which is divided up into a number of Sessions covering different tasks. The first Stage of the Tutorial is made up of sessions on the fundamentals of using your PCW to prepare and print documents. This is followed by sessions on the various ways in which you can use LocoScript 2 to style your document and to transfer information between different documents. Stage III of the Tutorial looks at the more advanced word-processing features of LocoScript 2, such as Headers and Footers, using different types of paper and using different printers.

Later sessions of the tutorial will use techniques, etc. that have been introduced in earlier sessions – so we suggest you practise using LocoScript 2 in the way described in each tutorial session until you feel confident before going on to the next.

You don't have to work through the whole tutorial straight away – though, obviously, the more you know about how LocoScript 2 works, the better. Just work through as far as you want: then get some experience in using the techniques you have learnt before carrying on and seeing the other things that LocoScript 2 can do.

As you work, follow the instructions carefully. If at any stage you are not sure how to carry out a particular instruction, just look it up in the index: the bold page number gives the place in the tutorial where full details are given.

By all means, experiment a little as well. Don't worry about pressing the wrong key: if the key you press isn't right at the moment, all that happens is that your PCW will bleep – to tell you that LocoScript hasn't done anything with your keystroke. But do be careful to finish work on one session's document before starting on the next session – or you may get very confused.

The Tutorial is designed to gradually build up the range of LocoScript tools you know how to use. If you ever feel out of touch with real documents as you work through the tutorial, turn to page 297. Here, in a 'postscript' to the tutorial, we describe some examples of different types of documents – letters, reports, invoices, newsletters, books, etc. – that you could prepare using LocoScript. Beside each example we have noted the LocoScript features you might use in preparing these documents and what they would do for you.

The LocoScript program is stored on a 'special' disc, known as the Start-of-day disc – to remind you that it is the disc to use first. You keep the documents you prepare on other discs known as Data discs, which you only use once LocoScript has been loaded into memory.

LocoScript, like all other computer programs, doesn't understand English – it needs

instructions that it understands. These have to be learnt but, in LocoScript, these instructions are almost all available through pull-down menus and so, much of the time, all that you need to do is select the menu option you want. The tutorial introduces all the options and explains what these can do for you.

In fact, many of the menus are just there to help you while you are learning how to use LocoScript. As you gain experience, pulling down menus can become tiresome – so LocoScript has lots of shortcuts as well, which we introduce alongside the menu options.

OK, learning how to use LocoScript takes some effort on your part but just remember all those advantages:

- invisible revisions and corrections
- perfect copies every time
- complicated layouts achieved with ease
- professional results
- different versions of the same document with little effort
- ...

First, though, a few pieces of essential information:

- the conventions used in this user guide
- how to load LocoScript 2
- how to get back to the central point of all operations – the Disc Manager Screen
- how to abandon an action you've started

• If anything happens while you are working through the tutorial that isn't explained in the text, turn to Appendix V at the back of this guide. This is the troubleshooting section, which will tell you what has happened and what action to take.

Important: For this tutorial, you will need to have the PCW printer connected to your PCW **before** you switch on and load LocoScript. For details, see page 5.

Note: This tutorial assumes that you know the 'basics' of using your PCW – for example, how to handle discs and that you put a disc into a disc drive when you want to use the information and programs stored on it. Full details are given in Part I, Chapter 2 (page 14).

Conventions

The conventions used in this user guide are as follows:

- Messages on the screen and options in the menus are written in a special style of text. For example, the 'Copy disc' option is shown as `Copy disc`.
- Keys that you need to press are shown symbolically. As far as possible, the keys shown match the keys on the keyboard. For example, the key marked ENTER is shown as [ENTER]
- An italic (slanting) *n* is used to represent a number (one or more digits): the actual number depends on the document, etc. you are handling

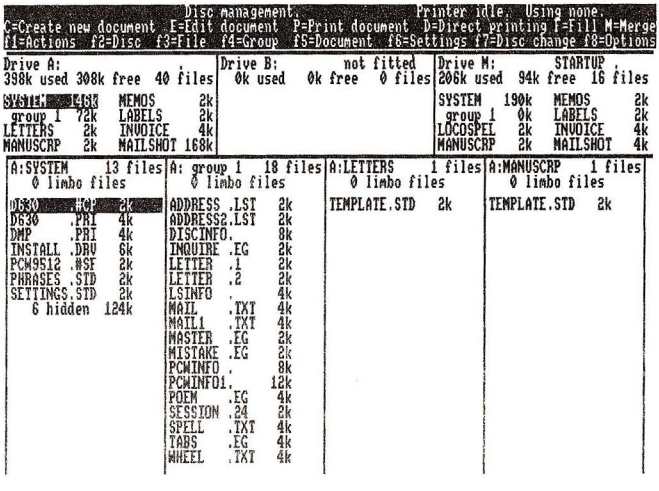
Loading LocoScript 2

Before you can use LocoScript 2 to prepare a document, you have to load the LocoScript 2 program into your machine and start it running.

Starting with your machine switched off, switch it on and insert the Start-of-day disc you prepared in the preparatory session (pages 6&7) in Drive A. (If you have a single-drive machine, Drive A is the disc drive: if you have a two-drive machine, Drive A is the lefthand disc drive.)

The LocoScript 2 program on this disc should now be read into your computer's memory. First you should see the familiar pattern of horizontal lines.

After a first set of messages, the screen will change to:



The appearance of this special screen – called the Disc Manager Screen – signals that the LocoScript 2 program has now been loaded and is ready to start work on letters and documents. If you see a very different display, the screen flashes or your PCW bleeps, you have put the wrong disc in the drive – but wait until your PCW has finished reading from the disc (ie. until the light on the disc drive stops flashing) before taking this disc out and trying again with a different disc.

If you saw a message about a READ.ME document while it was loading and you haven't done this before, you should now press the [↓] key until READ.ME is highlighted, put a sheet of A4 paper into the PCW printer (for details see Part I, Chapter 2) and press the [EXIT] key. Then press the **P** key, followed by the [ENTER] key twice. The information in the READ.ME document will now be printed out, a page at a time. As each page is printed, check to see if it has the word `more` at the bottom. If it does, load another sheet of A4 paper and press [EXIT] so that the next page can be printed. Use the pages you have printed as a supplement to this User Guide.

One thing remains to do. You must now release the Start-of-day disc and withdraw it from the drive.

With LocoScript 2, you have one disc – the Start-of-day disc – that you use to load the LocoScript 2 program into your computer's memory, and any number of Data discs that you store your documents on. Once the program has been loaded, the Start-of-day disc has done its job and the copy of the program on the disc won't be needed again until you start using LocoScript 2 again. Indeed, this is precisely why it is called the Start-of-day disc.

All the rest of your work is normally done with Data discs. You could use your Start-of-day disc as a Data disc as well – if you aren't using LocoSpell or LocoMail, there's some spare space on the disc that can be used to store documents – but this isn't advised. It is a lot easier to keep the Start-of-day disc purely as the disc you put in when you need to load the LocoScript 2 program.

As an exception, however, this Tutorial uses the Start-of-day disc for much of its work. Some important example texts, referred to in the following sessions, are supplied on the Start-of-day disc.

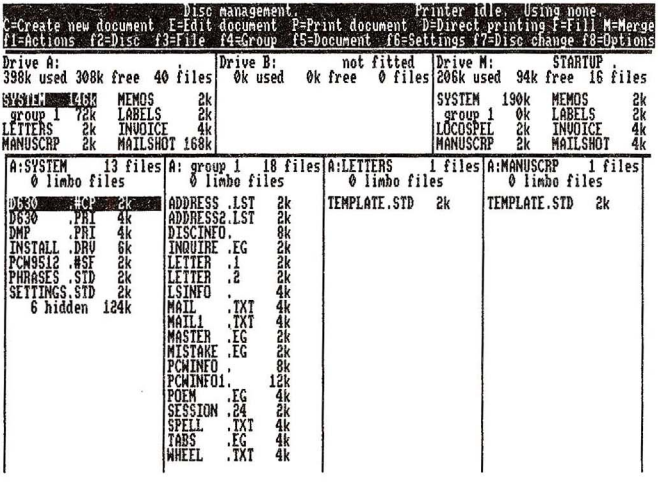
• If your machine is already on but you have been using the CP/M operating system (described in Part III of this User Guide), you don't have to switch it off and switch it on again before you can load LocoScript 2.

Instead, put your Start-of-day disc in Drive A and then use the special three-key combination [SHIFT] [EXTRA] and [EXIT] to 'reset' your machine. (Hold down the [SHIFT] and [EXTRA] keys and press the [EXIT] key without releasing the other two keys.) This is equivalent to switching off and switching on again but is better for your machine.

Note: Resetting completely clears your computer's memory – so remember to check that there is a copy of everything important saved on disc before you reset your machine. This applies in particular to files you have stored on the Memory disc (Drive M – introduced in Session 1 of the Tutorial).

Returning to the Disc Manager Screen

The central point for all operations is the Disc Manager Screen:



This is the screen that is automatically displayed immediately after you have loaded LocoScript 2.

As a general rule, you need to return to the Disc Manager Screen between, say, editing one document and editing a different document or printing the same document.

Wherever you are in LocoScript, what you do to get back to the Disc Manager Screen is finish whatever you are doing at the moment (for instance, if you have a menu displayed on the screen, close this up by press CAN) and then press EXIT. This signals to LocoScript 2 that you want to leave the job you're currently doing. If necessary, LocoScript puts up an Exit menu from which you select an option and then it returns you to whatever task you were doing before. If this doesn't return you to the Disc Manager Screen, then press EXIT again.

Abandoning an action

Mistakes are always possible. The ways out of trouble are as follows:

• If you call up a menu you don't want (or you have got to a stage in the process at which there is menu on the screen that you want to get out of), press [CAN]. This closes up the menu. However, don't press [CAN] when there is an error message on the screen: **always** select one of the options listed in the error message.

• If LocoScript has started an operation you don't want – for example, moving you from one end of the document to another or replacing one word for another throughout your document – press [STOP], wait for LocoScript to pause and then press [STOP] again. The first [STOP] makes LocoScript pause; the second abandons the action.

• If you want to abandon the changes you have been making to a document, press [EXIT] to finish work on the document and then select the `Abandon edit` option in the Exit menu. The new version is then thrown away: it does not replace the old version stored on disc. LocoScript doesn't touch the verson stored on disc until after the new version has been successfully stored.

In fact, all is not lost if you change your mind about discarding the old version after saving the new version – or if you accidentally select `Save` instead of `Abandon` from the Exit menu. LocoScript doesn't actually erase discarded documents from the disc until it need the space to store a new document: instead it puts them into a special 'Limbo' state. This gives you the chance to recover any documents you discard accidentally (see Session 7).

Stage I: Basics

Fundamentals

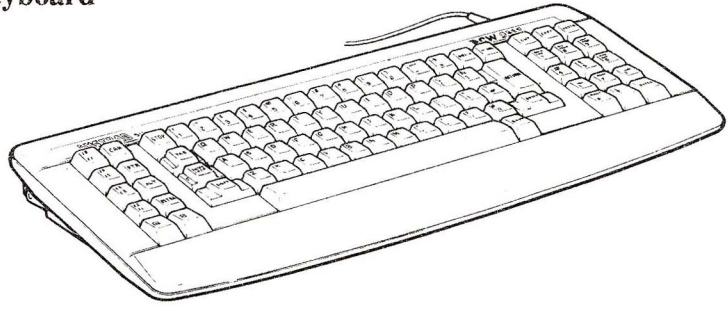
The complete newcomer to computing often finds doing anything with a computer a bit of a daunting prospect. Lots of things about the computer are strange. Then to cap it all, people 'in the know' insist on using their own incomprehensible jargon.

This session is for people who don't feel at all at home with a computer. If you are thoroughly familiar with the ins and outs of storing files on disc, you can proceed straight to Session 2 – though we recommend you to glance through this session to see what is covered here.

The parts of your PCW

Your PCW has three obvious parts – a Monitor Unit (with the screen and disc drives), a Keyboard and a Printer – and one hidden one. This is the processor, which actually does all the computing.

The Keyboard



The Keyboard's role is purely to take information and instructions from you and pass these on to the processor. When you want to give your PCW an instruction or some information, then you type this on the keyboard.

If you look at your keyboard, you will see that you have a number of keys with letters, numbers and other characters on them – rather like the keys you have on a typewriter. These are known as the Character Keys.

But, in addition to these, you have a number of keys with strange legends like `f1`, `Paste`, `EOL`, `Enter`, and `DEL→`. These are keys that are used to give specific instructions to the computer – though, just to complicate matters, the instruction

that is given often depends on which task your computer is doing at the moment. We will be seeing in this tutorial what instructions these keys send the processor while you are using LocoScript 2.

As well as pressing the keys on their own, you may also need to press them in combination with the keys marked `Shift`, `Extra` and `Alt`. These keys don't do anything when pressed on their own: what they do is modify the effect other keys have when they are pressed at the same time as one or more of these special keys.

The Shift key has very much the same effect as the Shift key on a typewriter. In other words, when you hold down the Shift key and press a letter key, you get a capital letter. When you hold down the Shift key and press a key with two legends on it, you get the character or action corresponding to the upper legend: without the Shift key, you get the lower character or action. (Pressing the Shift Lock key gives you the effect of holding down the Shift key with every Character Key you press – until you press the Shift Lock key again, or the Shift key.)

The Extra and Alt keys work in a similar way to the Shift key. You either get a special character or a special action depending on the key you press in combination with these keys. The only difference is that the result of these key combinations are not engraved on the keys – instead you have to look up the details in the manual.

Further effects and characters can be accessed by holding down both Shift and Alt.

The Screen

The Screen's job is to display information.

What's shown on the screen is organised by the processor. As a rule, you will usually see everything you type – so that you can see what you are doing. You also see messages from the computer to you. Whenever the computer spots a problem, it will display a message on the screen – telling you what it thinks has happened.

The Printer

The Printer's job is to transfer information sent to it by the computer onto paper – giving you what is known as a 'Hard copy' of this information. The way the information is laid out on the paper in the printer is organised by the processor before it is sent to the printer.

A word processor like LocoScript 2 makes extensive use of printers, because the whole point of word processing is to produce 'Hard copies' of documents which you can give to other people to read!

The Disc Drives

The Disc Drives' job is to help you store and retrieve information – rather like you store and retrieve information when you use a tape recorder.

The discs you put into these drives have storage areas on them in which information can be stored in an electronic form. The data stored on disc is 'permanent' in the

sense that it will still be there when you use the disc again – however long after you first stored the data. However, it can also be 'erased' when you have finished with it or it can be replaced by new information.

When you want to keep some information, then you get the computer to 'save' this on one of these discs. Later, when you want the computer to use this information, you put the disc back in the drive and get the computer to 'read' the information from the disc into its memory – taking a copy of the information stored on the disc.

Disc Drives work much faster than tape recorders. It is also very much easier to find the individual recordings on the disc than it is on tape.

How the computer processes information

The computer processes the pieces of information you give it by following a series of instructions known as the computer program. The program organises every aspect of the job you want to do. The facilities you can use at any time depend on the computer program you are using. When you use LocoScript 2, you are using the facilities provided by the computer program known as LocoScript 2.

To use any computer program, you have to put a copy of the program into the computer's memory – this is called 'loading' the program. Then you have to start the program working – or 'running'. What you do to load a program and run it varies from computer system to computer system and from program to program. LocoScript 2 is loaded and run as part of the process of switching on the computer.

Once the program is running, what happens to information and instructions that you type at the keyboard is firmly in the control of the program. Some programs ignore what you type completely. LocoScript 2, however, spends essentially all its time taking information and instructions that you type in, processing these and then displaying the result on the screen.

When you are not used to using a computer, you may well be worried about typing 'the wrong thing' in case you damage the program or damage the computer. Such fears are groundless. For a start, you always work with a **copy** of the program – so the only way you could destroy the program itself is by erasing it from your program disc – and most programs are quite strongly protected against that.

The worst you can do by typing 'the wrong thing' is lose the document you are currently working on or, in some very rare cases, you can make the program stop running. You can always tell if you have stopped LocoScript because it won't react to any of the keys. If LocoScript does stop, all you need to do is to reload LocoScript again – either by resetting your PCW (see page 40) or by switching off, waiting a few moments and then switching back on again. If you lose a document, then this can sometimes be recovered, as you will see later – but sometimes it will be gone for good. Losing important documents in this way can be very frustrating, which is why we show you how to make 'Back-up' copies of your discs and encourage you to save your work frequently.

About disc drives

The disc drive(s) behind the slots on the PCW Monitor are called Floppy disc drives – and the discs you put in these are called CF2 Compact Floppy discs. (Despite appearances, these discs are indeed floppy. They just don't seem floppy – thanks to their rigid outer casing!) You insert a disc into a drive by holding the disc by its labelled end, with the side labelled **1** or **A** upwards, and gently push it in until it clicks home. To remove a disc from the drive, you first presss the Eject button on the drive to release the disc and then withdraw it completely from the drive.

Floppy discs are used one at a time in a Floppy disc drive. The computer 'locks on' to each disc as it is used and so, while you can readily use different discs in a drive, you need to be careful about when you change over from using one disc to using another – and you need to tell the program you are using that you have done this.

Because you are able to put a sequence of different discs in a Floppy disc drive, LocoScript (and other programs) always refers to information as being on the drive – when it means that the information is on the disc that is currently in this particular drive – and it gives the drive a name to identify it by. If you have just the one Floppy disc drive, this is called Drive A; if you have two Floppy disc drives, the lefthand one is called Drive A and the righthand one is Drive B.

Floppy discs are not the only type of disc you have – because in fact you also use part of the computer's memory as a special type of disc, known as the Memory disc. This 'disc' is used by LocoScript 2 to store certain files that it needs to have access to. However, it can also be used as a temporary storage place for documents – temporary because it is wiped clean when your PCW is switched off or there is a power cut or you reload LocoScript by 'resetting' your machine (see page 40).

The Memory disc operates in exactly the same way as your Floppy discs (except much faster), so LocoScript 2 gives the Memory disc a Drive name too – Drive M. Of course you can't take the disc in and out of Drive M the same way you can take discs out of Drives A (and B).

Word processing with LocoScript 2

LocoScript 2 is a special kind of computer program called a word processor. This means that it has the specific job of processing text – helping you to make whatever changes you want to the text you type and to embed special codes in your text that specify how it should be laid out and styled when you come to print it.

Computers are good at manipulating the information in their memory – and LocoScript 2 lets you take full advantage of this by helping you

- delete text that is no longer wanted
- re-order your text
- change the styling codes
- insert new codes and new text in the existing text

etc. etc. In fact, you can change and change again interminably.

Because you will want to make changes in any part of the text, you need a way of pointing at the place in the document where you want to make your change. Pointing with your finger at the screen is no good because the computer can't 'see' you do this. What you need is something that you can point with by pressing keys on the keyboard.

The pointer LocoScript 2 gives you is an oblong shape on the screen called a cursor. This cursor can be moved by pressing four special keys on the keyboard called the Cursor Keys – [←], [→], [↑] and [↓]. The position of the cursor always shows where you are working – ie. the place in the document that any text you type will be inserted or where the next instruction you give will start to have an effect.

LocoScript 2 also organises the display on the screen so that as well as seeing the text you are preparing, you also see lots of other information about what you are doing and the facilities that are available to you. In particular, LocoScript 2 shows you the names of keys to press that bring menus of other options on the screen from which you can pick out the action you want – by moving another pointer, again with the Cursor keys.

When you are happy with your text, you tell LocoScript 2 to print it. Then, LocoScript sends a copy of the sequence of characters and codes that it has been carefully preparing to your printer – which faithfully carries out the instructions and produces a perfect 'clean' copy.

Storing documents

The PCW only keeps the information about one document in its memory at a time. What is more, the PCW's memory is automatically wiped clean every time you switch it off – or when there's a power cut.

To stop all your hard work being lost, you can save an 'electronic' copy of the document on one of your computer discs – and you can do this any time you like. You don't have to have completed the document before you can save it. Later, you can 'read' back into memory a copy of the document as stored on disc – and then carry on working on it as if you had never stopped.

After carrying out further changes, you can store a copy of the new version on the disc. This effectively replaces the old version – but it doesn't actually write on top of it. In fact, the new version is written first and the old version is erased only after this has been completed.

Each document is stored on disc as a unit known as a 'file' and typically you will have lots of files on each disc. The amount of storage space on a disc lets you store about 360 pages of text in up to 256 different files.

(The amount of storage space on a disc is always given as a number of k where k stands for kilobyte and 1 kilobyte is 1024 bytes. Each byte can hold one character – so each kilobyte holds about 1000 characters. Discs have a storage space of 720k – or about three quarters of a million characters.)

So that you can pick out the one you want to use, each file is given a name and details of the file's name and where it is on the disc are held in the disc's 'Directory'. With a possible 256 files on the disc, you could have a lot of searching to do to find the file you wanted – particularly if you have a number of discs in use.

To make it easier to find the document you want, LocoScript 2 gets you to allocate each document to one of its eight groups – each of which LocoScript 2 displays separately, listing the documents in the group in alphabetical order. If you are organised about which disc you use and which group you use for each document, you will find it very easy indeed to find the documents you want – especially as you can choose names for the document, the group and the disc that are descriptive of the sort of information you are storing in them.

Backups

Having one copy of each document you prepare on a disc is fine – provided nothing happens to the disc. However, there are lots of disasters that just might happen to the disc:

- it could get scratched
- it could have coffee spilled on it
- it could accidentally be left too close to the magnet in your TV

etc., etc.

and then all your hard work would be lost.

The way to guard against such disasters is to make what are known as 'Backups'. These are copies of 'working' discs that have valuable information on them – and that means anything that you don't want to lose or have to type in again.

A Backup is typically just a separate disc on which you make a straightforward copy of all the information on the original disc – and which you then store somewhere safe. OK, this means buying extra discs – but, as many people have learnt from painful experience, new discs are a lot cheaper than re-typing all the documents etc. you've lost through a problem with a disc!

Session summary

That's basically all that is important to know about computers – and certainly all you need to know to appreciate what LocoScript 2 is doing for you.

Along the way, we deliberately introduced a number of jargon words – partly because there is no need for these to be incomprehensible but partly because, as you will discover, they give you a very powerful way of describing what you are doing. Any moment now, you too will be blinding others with jargon!

Running off a letter

In this first practical session of the tutorial, we shall go through all the stages of preparing and printing a very simple letter using LocoScript 2. The idea is to give you an overview of how to use LocoScript to produce a document and to get you accustomed to the way LocoScript works.

If you have used LocoScript before, you can skip this tutorial session altogether.

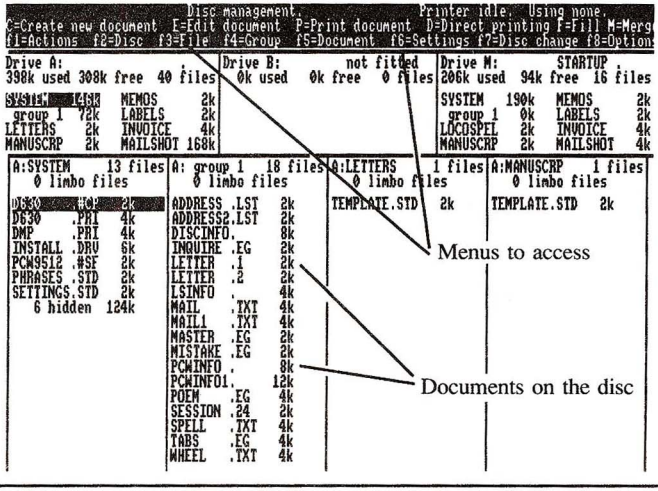
Preparation

Before you can start, you have to load the LocoScript 2 program into your machine and start it running. So, if you haven't already done so, work through the loading procedure described in the introduction to this tutorial (page 6), finishing when you have removed your Start-of-day disc from the drive.

Note: For this tutorial, you will need to have the PCW printer connected to your PCW **before** you switch on and load LocoScript. For details, see page 5.

The first screen

What you have on the screen at the moment is LocoScript's Disc Manager Screen. This shows you what files and documents you have available and where they are to be found.



The Disc Manager Screen is the central point for all your work with LocoScript. You begin work on each of your documents from here and you are automatically returned here when you finish.

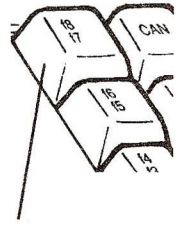
Notice the three 'Information lines' at the top of the screen. *All the different screens that LocoScript displays have three Information lines at the top, giving you details of the job you are doing at present and outlining the actions and menus that are currently available.*

Getting started

The first step is to put a Data disc in Drive A (the lefthand disc drive if your machine has two) and press [f7]. A Data disc, you will remember, is a disc on which you store your documents.

The Data disc we are going to use here is the new Documents disc that you prepared in the preparatory session (pages 8–10).

Hold your disc with Side 1 uppermost and put it into Drive A. When the disc has clicked home, press [f7]. *You press [f7] each time you change the disc in a drive – to tell LocoScript 2 that you have done this.*



f7 key

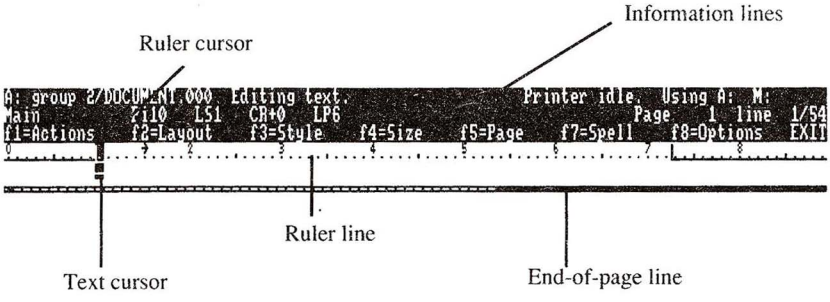
Starting a new letter

Hold down one of the [SHIFT] keys and press [←] twice, followed by [↓] twice; then press the 'C' letter key. This tells LocoScript to create a new letter, ie. give you the equivalent of a blank sheet of notepaper. (**Note:** Most of these keystrokes were to get you into the right position on the Disc Manager Screen so that you created a letter. You won't have to press this sequence of keys every time you want to create a document.)

LocoScript's immediate reaction is to put up a short 'Selection' menu, suggesting where to store the new document and what name to give it. You can change any or all of the details in the menu, as we shall describe later, but at this stage, just press [ENTER] to accept all the details LocoScript suggests. [ENTER] *is always the key to press to tell LocoScript to go ahead with the current information.*

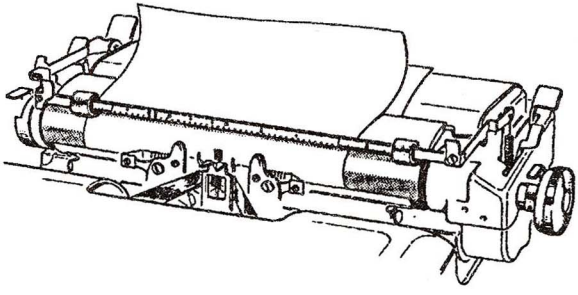
The new document

The screen now changes completely to this:



There are a number of features of this screen to pick out.

- Three Information lines at the top of the screen – exactly as there were three Information lines at the top of the Disc Manager Screen we displayed earlier.
- A 'Ruler' line immediately below the information lines: This line is very like the paper bail on a typewriter; it lets you know where your margins and tabs are.



- The special line – part broken, part solid: This is the End-of-page line and it always appears immediately below the last line of text to appear on a page. At the moment, there isn't any text on the page – so the End-of-page line is right up the top of the screen. You will see it move down as you type.

The rest of your screen is your (electronic) piece of paper. Positioned on this electronic piece of paper is an oblong shape – the 'Text cursor'. This is used to mark where in the text you are working – in particular, where anything you type will appear on the screen.

Typing

To start the letter, type `Dear Chris` – exactly as you would on a typewriter. (We won't worry about putting in an address or a date.) Notice where what you type appears on the screen and how the Text cursor moves as you type.

Now press [RETURN]. Pressing the [RETURN] key does two things: it puts the special 'Carriage return' character ↵ immediately after the `s` of `Chris` and it moves the Text cursor to the beginning of the next line (showing you that the next thing you type will be put on the next line). And because you now have an extra line on the page, the End-of-page line moves one line down the screen.

The Carriage Return character just marks where you have pressed the [RETURN] key to start a new line: it is never printed. You don't have to work with these characters on the screen (we show you later how to stop them being displayed) but most people find them helpful.

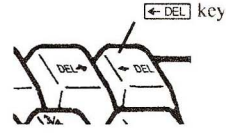
Now press [RETURN] again – to move the Text cursor to the beginning of the next line. This gives you a blank line under `Dear Chris`.

The next thing to prepare is the first paragraph of the letter. The text we shall use is:

```
Many thanks for recommending AMSTRAD's PCW and Locomotive
Software's LocoScript 2. I'm absolutely thrilled to bits. Here
am I, a positive duffer with computers as you know, producing a
word processed letter the same day as I got the machine.
```

Start by typing:

```
Many thanks for recommending AMSTRAD's PCW and Locomotive
```



Type just these words: in particular, don't press [RETURN]. If you make any mistakes in typing this, press the [←DEL] key to rub out the character before the Text cursor (ie. the last character you typed) and move the cursor back. If you want to rub out a number of characters, press [←DEL] again or hold the key down. But watch what you are doing when you hold down the [←DEL] key; this is one of the keys on the PCW keyboard which automatically repeat if you keep them held down, so if you are not careful, you will rub out more than you expected!

When you have typed this, look at the screen. This shows you that you are now nearing the righthand margin of your page.

Now watch carefully what happens as you type `Software` letter by letter – in particular, what happens as you type the letter `a`

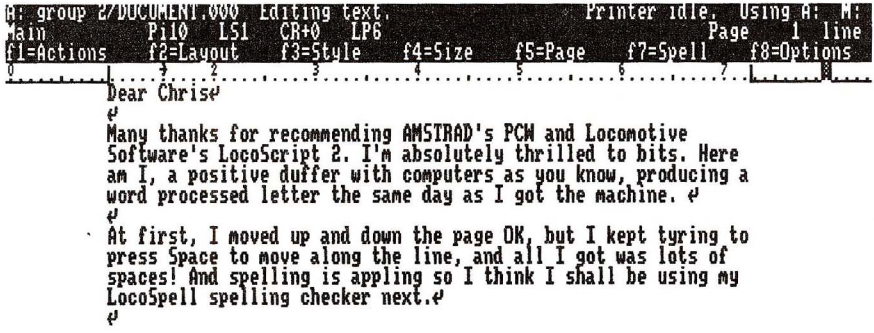
The screen flashed and `Softwa` moved onto the next line because LocoScript worked out that the word was too long to fit on the first line. When you use a typewriter, you have to work out where to start each new line but with LocoScript, you don't have to do this – LocoScript does the calculations for you. The only time you have to press the [RETURN] key is when you specifically want to start a new line.

This feature of LocoScript is called Word Wrap, and it is one of the many ways in which a word processor is very much better than a typewriter. You never have to worry about whether the word you are typing is going to fit. All you have to do is just type the words. Carry on typing the rest of the paragraph and you will see Word Wrap work again for you when you get to the words `am` and `wordprocessed`.

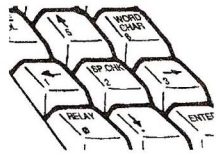
Where LocoScript shows one line stopping and another beginning is precisely where the lines will break when your document is printed out. Similarly, LocoScript automatically moves onto a fresh page (with its own End-of-page line) at precisely the point at which the text will move onto the next page when you print your document out.

Correcting your mistakes

The second paragraph of the letter is a special piece of text we have set up for you. Add this to your letter by pressing the [PASTE] key and then typing the letter `Z`. (We explain this particular piece of LocoScript magic in Session 14.) Your letter should look like this:



This paragraph contains a number of deliberate mistakes which need to be corrected. To do this, we have to move the Text cursor to each mistake in turn and then make the necessary correction.



You move the cursor by pressing the [←], [→], [↑] and [↓] – the four 'Cursor' keys.

(LocoScript has a number of cursors that it uses at different times to pick out items on the screen. The Cursor keys are always the ones to use to move the current cursor.)

If you are used to working on a typewriter, then you will have to 'unlearn' the techniques you know for moving around a document – in particular, you can't use the Space Bar to move along a line of text, because pressing this inserts 'space' characters.

The first mistake is `tyring`, so start by moving the Text cursor to the `y` of this spelling mistake. Press the [↑] key until the cursor is over the `A` of `At` (Don't worry if you overshoot; just press [↓] to get back to the right place.) Then press the [→] key until the cursor is over the `y`. (This time, press [←] to get back again if you overshoot.)

The Text cursor now appears to be on the `y` but actually it is just before this letter. The Text cursor is really a very thin line, after one character and before the next: the oblong shape is only used to make the cursor visible. The real position of the cursor is marked by the lefthand edge of the oblong. It is important to remember this – as you will see.

To make the correction, you need to delete the `yr`. These characters are immediately after the Text cursor – so the key to press is the [DEL→] key. (This is just next to the [←DEL] key.) Press this key once and the `y` is deleted: press it again and the `r` is deleted. The cursor is now between the `t` and the `i`.

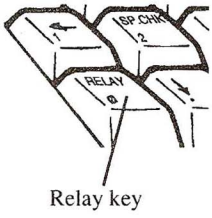
(You could equally well have put the Text cursor after the yr. Then the characters you want to delete would be immediately before the cursor and so to delete them you would press the [←DEL] key twice. The cursor would still finish in the same place.)

Now type `ry`, and there on the screen is the word `trying`.

The second mistake is `spelling` on the third line of the paragraph. This should have been `my spelling`. Once again, use the four Cursor keys to position the Text cursor – this time over the first letter of `spelling` and then type `my`, followed by a space. As you type, you will see the text to the right of the cursor moving right. Suddenly, as the end of the line reaches the right margin, the line splits into two halves. Rather than push the end of the line out of sight off the righthand side of the screen, LocoScript opens up a space and moves the end of the line onto the next line.

```
Dear Chris↵
↵
Many thanks for recommending AMSTRAD's PCW and Locomotive
Software's LocoScript 2. I'm absolutely thrilled to bits. Here
am I, a positive duffer with computers as you know, producing a
word processed letter the same day as I got the machine. ↵
↵
At first, I moved up and down the page OK, but I kept trying to
press Space to move along the line, and all I got was lots of
spaces! And my ■
          spelling is appling so I think I shall be using my
LocoSpell spelling checker next.↵
↵
```

OK, the paragraph doesn't look very tidy at present but that is easily remedied – just press the [RELAY] key when you have finished typing. This lays out afresh the paragraph you are working on, taking away the broken lines.



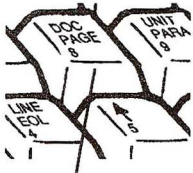
Relay key

The other mistake is `appling`, instead of `appalling`. To correct this, move the cursor to the `l` of `appling` and then type `al`. Again, the line you are working on becomes too long and LocoScript opens up a space, but this time don't tidy it up – because we are going to see LocoScript do this for you.

Assuming that the first paragraph is correctly spelt, all that's left to do is add `Thanks again` and your name at the bottom. (We won't worry about adding an address at the top, because that will only delay us before we can print out the finished letter.)

Moving the Text cursor down to the bottom of the page is one of LocoScript's built-in actions. This one is known as `Page` and it is the lower option on the key marked `DOC/PAGE`. So just press this key.

The Text cursor moves right to the end of your current text. But, more interestingly, look what has happened to the second paragraph that you left a little ragged – LocoScript 2 has tidied it up for you. *By pressing* [PAGE], *you have changed where you are working to the bottom of the page and LocoScript 2 always makes sure that everything is properly laid out up to the point you are working.*



Page key

Now type:

[RETURN]

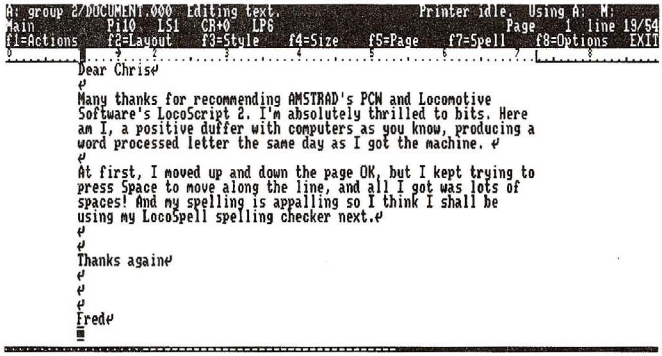
`Thanks again` [RETURN]

[RETURN]

[RETURN]

[RETURN]

`Fred` [RETURN]



After the corrections have been made

Finally, check the whole letter over for mistakes. This is unfortunately something that LocoScript can't automatically do for you. (However, we will be showing you later how to use a special part of LocoScript called LocoSpell to check your spelling.)

When you are sure you're happy with it, press the EXIT key. *(Throughout LocoScript, you press the EXIT key whenever you want to finish what you are currently doing and go back to the previous task.)*

LocoScript responds with a menu of 'Commands' – `Finish edit`, `Save and Continue`, `Save and Print`, and `Abandon edit`, with `Finish edit` highlighted.

We will look at what all these options are in Session 3. For now, we will just take the `Save and Print` option. This is LocoScript's shortcut to making a printed copy of the letter we have prepared. (Printing is really a separate task from preparing a document. We look at printing properly in Session 4.)

Note: If the `Save and Print` option isn't included in the menu, you haven't got a printer connected to your PCW or the printer is not connected properly or it is busy printing something else. When this is the case, select Finish edit instead: then when you return to the Disc Manager Screen, press the PTR key and see whether the information lines now say 'No printer' (ie. the printer isn't connected properly) ot Printer: Active (ie. it is trying to print something else – perhaps, waiting for you to load another sheet of paper.) Turn to the Troubleshooting section (page 356) for further advice.

LocoScript always pre-selects one of the options in any menu that gives you a choice of commands. The option that is selected is picked out by the arrow. To select a different action you need to move the arrow to the option you want. You do this by moving the band of highlighting – the Menu cursor – to this option. The arrow automatically moves as you move the cursor. *(This is how you pick out the action you want in any 'Commands' menu in LocoScript 2.)*

In this case, you want to move to the `Save and Print` option. The Menu cursor, just like the Text cursor, is moved by pressing the Cursor keys – which, you will remember, are [←], [→], [↑] and [↓]. So the way to move the Menu cursor down to `Save and Print` is to press [↓] twice.

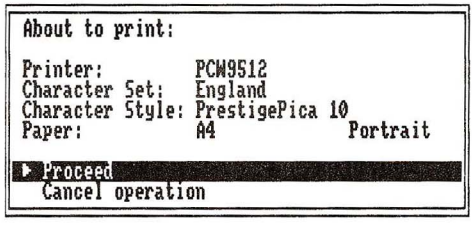


(We will see later a shortcut for moving straight to the option you want, but you can always move any cursor in LocoScript by pressing the Cursor keys.)

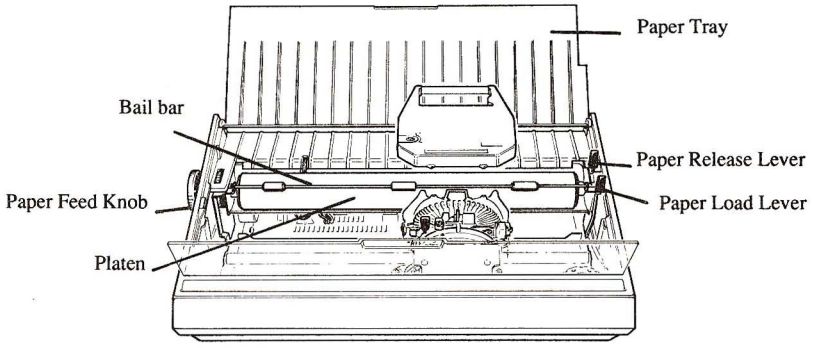
Now press [ENTER] – just as you did earlier to tell LocoScript to go ahead and create the new document outlined in the Selection menu. That time, pressing [ENTER] told LocoScript to go ahead with the current information. This time, the instruction is to carry out the action picked out by the arrow.

LocoScript now closes up the screen you have been working on and returns you to the Disc Manager Screen. The light on your disc drive flashes on and off a few times. This is LocoScript saving your document – the first part of the combined task.

Next, you will see another menu on the screen – rather like the Selection menu you saw when you were creating the document at the beginning of this session, but with different options. Ignore these options for now: just press [ENTER]. The following message will then appear:



This message is just a reminder that LocoScript is expecting you to use A4 paper – rather than any other size of paper. It only appears the first time you print a document after loading LocoScript 2.



Before you do anything else, you must load a sheet of A4 paper. To do this, place one sheet with its lefthand edge aligned with the third ridge of the paper tray and so that its top edge rests behind the platen (the rubber roller). Then pull the Paper Load Lever fully forward, past a 'half-way' position that you will feel as you move the lever, and then let it back to this half-way position. This leaves the bail bar raised. The paper is automatically fed in. (All these printer parts are shown above.)

When the loading has been carried out correctly, the paper should be left in approximately the right place for printing. You can adjust its position by pulling the Paper Release Lever forward and then easing the paper along/around the platen.

When the paper is in place, push the Paper Release Lever back and push the Paper Load Lever right back. Then press [EXIT] followed by [ENTER]. Your letter will now start to print. When it is finished, you can just lift it out.

If you look at the Disc Manager Screen, you will see that there is now the entry `DOCUMENT.000` in one of the columns in the lower part of the screen. This is the copy of your letter that LocoScript made on disc when it saved your work. You can produce new versions of the letter and/or reprint it by working with this copy – as we shall see in later sessions of this tutorial.

Session summary

In this session you have worked through all the stages of preparing and printing a very simple document. By the end of the session, you had a really quite professional-looking product – certainly better than you could produce on a standard typewriter.

But you haven't used any of LocoScript's facilities for presenting the name really well and when you look at the Disc Manager Screen in a few days time, the name 'DOCUMENT.000' will give you no clue as to what is stored in this document. To do better, read on.

Session 3

Preparing a new document

In the previous session, we showed how easy it is to prepare and print a simple document using LocoScript – but we did this without bothering about where the document was stored, what it was called or what LocoScript was telling you about the document you were creating.

In practice, it is best to pay attention to all these. So in this session, we are going to look at the process of preparing a new document again but this time we shall go through the steps you take to ensure the finished document is stored where you want it and called by a name that will help you remember what is stored in it. We shall also look at the information LocoScript is displaying on the screen as you prepare your document.

Creating the new document

Before you can create a new document you must display the Disc Manager Screen – that is, the screen on which the names of documents on your discs are displayed. If this is not on the screen at the moment and you are not sure how to display it, turn to page 41.

You must also have the Data disc on which you want to store the new document in one of your disc drives. *(Remember the difference between your Start-of-day disc and other discs you use while you are working with LocoScript. Your Start-of-day disc is the disc you use right at the beginning to load the LocoScript 2 program into your computer; the other discs are Data discs on which you store your documents.)*

For this tutorial session we are going to use the Documents disc as the Data disc, and this should be put in Drive A (the lefthand disc drive if you have two). If necessary, replace the disc in the drive by the one you want to use, but if you do this, remember to tell LocoScript 2 that you have changed the disc by pressing [f7]

Picking where to store the document

The next job is to pick out where you want to store your document. But first, a word about how LocoScript organises documents into groups.

LocoScript gives you eight groups on any disc. These groups are either known by numbers (group 0...group 7) or by names. The first group (group 0) on your Start-of day disc, for example, has the name SYSTEM.

The groups are designed to be used for different types of document. In particular, the group you pick out when you create a document fixes the type of document this will be. We didn't explain what we doing at the time, but we started the last session by

carefully picking out the right group so that the document you created was set up ready as a letter.

Letters are by no means the only type of document that you can produce on your PCW. LocoScript has been set up ready to produce a number of different types of document – memos, articles, address labels, as well as letters and 'plain' documents. We explain how this is arranged in Session 24, but for now all you need to know is

- when you want to prepare a letter, pick out group 2 (the LETTERS group)
- when you want to prepare an article (for example, for your club magazine), pick out group 3 (the MANUSCRP group)
- when you want to prepare a memo, pick out group 4 (the MEMOS group)
- when you want to prepare address labels, pick out group 5 (the LABELS group)
- when you want a plain document, pick out either group 0 (the SYSTEM group) or group 1 (unnamed)

(You also get a special kind of document if you pick out group 6 (the INVOICES group) or group 7 (the MAILSHOT group). However, these documents make use of some special facilities of LocoScript which we only come to in Sessions 21 and 22.)

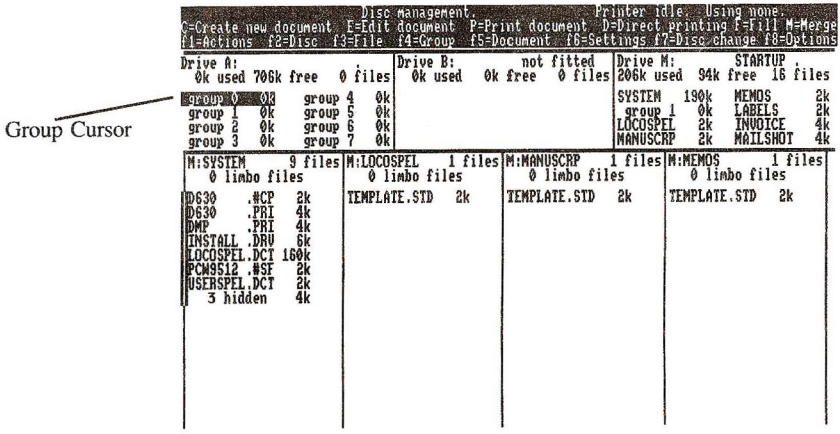
The Disc Manager Screen shows you which of your disc drives have a disc in them, what groups are available on those discs and how they have been used so far.

The disc drives are referred to by their names. Drive A (and Drive B if you have one of these) is the disc drive that you can put your compact floppy discs in. Drive M is a special part of your PCW's memory that is used like a disc drive. LocoScript uses it to store a number of special files which it needs to have available while it is working. These files are also stored on the Start-of-day disc but LocoScript works with the copies it makes on Drive M so that you can use your disc drives for your Data discs. These files mustn't be deleted.

If you like, you can store documents on Drive M, exactly as if it were another compact floppy disc – but you should only use Drive M as a temporary home for any document. If you want to keep something, then you must store it on one of your floppy discs because Drive M is wiped clean the moment you switch off.

The three boxes towards the top of the Disc Manager Screen summarise the eight groups on each of your drives. Each of the columns in the lower part of the Disc Manager Screen lists the contents of a different group. Which group is displayed is written at the top of the column.

You pick out the group you want to work with by moving the band of highlighting in the top part of the screen – the Group cursor – over the name of this group. The Group cursor is yet another of LocoScript's cursors and so it is moved by pressing the Cursor keys. However, in this case, you have to hold down the SHIFT key at the same time as pressing the Cursor keys. *(The way to remember that you have to hold down SHIFT as well is to think of moving from one group to another as a big movement of the cursor – because there are other places in LocoScript where holding*



Group Cursor

down the SHIFT key at the same time as pressing a Cursor key produces a bigger movement than just pressing the Cursor key on its own.)

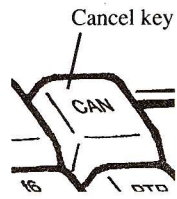
Don't worry if you want to create a special type of document on the disc in Drive A but the box for Drive A just has groups called `group 0`...`group 7`, rather than `LETTERS`, `MANUSCRP`, etc. If these names are in the corresponding places in the box for Drive M, then LocoScript will automatically create the special type of document when you use Drive A.

For this exercise, you want the second group on Drive A - `group 1`. So hold down the SHIFT key and then press ←, →, ↑ or ↓ until the Group cursor is on this group. As you do this, you will see the band of highlighting in the bottom part of the screen move as well. This is the File cursor and it is 'tied' to the Group cursor in that they always pick out the same group of documents. If, as in this case, there isn't a column for the group the Group cursor is on, then the File cursor becomes a vertical bar – showing you that the group is currently empty.

Creating the document

When the Group cursor is in place, press the 'C' letter key to tell LocoScript that you want to create a new document – just as you did in Session 2. (C for Create is quite easy to remember but if you are ever unsure which key to press, just look at the second of the three Information lines at the top of the page. There you will see `C=Create new document` – to remind you.)

As before, LocoScript then puts up a Selection menu, giving details of the group and the drive you have selected and suggesting a name that you could use for your new document. *(LocoScript always displays a Selection menu of this sort when you ask to do something with a document.)* The name LocoScript suggests for a new document is always `DOCUMENT.`*nnn* where *nnn* is a number.



If the Selection menu shows that you didn't pick out the group you meant, press [CAN]. This clears away the menu and returns you to the Disc Manager Screen as if you had never pressed C. Re-position the Group cursor and then press C again. *([CAN] is always the key to press when you want to clear away a menu that you have brought onto the screen by mistake.)*

Giving the document a name

Now think up a name for the new document. The name you choose must have a main part which is between one and eight characters long; to that you can add an 'extension' of up to three characters which you separate from the main part by a full stop. There are a number of characters you can use in the name (see Appendix III) but in general it is best to use just the capital letters A...Z and the digits 0...9. You can't put any spaces in this name.

It's a good idea to choose something that will remind you about the contents of the document. For example, you might call your account of the treasure hunt your club held in May `TREASURE.MAY` or `TRHUNT.MAY`. The name we are going to use here is `SESSION.3`

Make sure the Menu cursor is on the Name line of the Selection menu and then type this name. (If the Menu cursor is over a different line, what you type will appear on that line – and not on the Name line.)

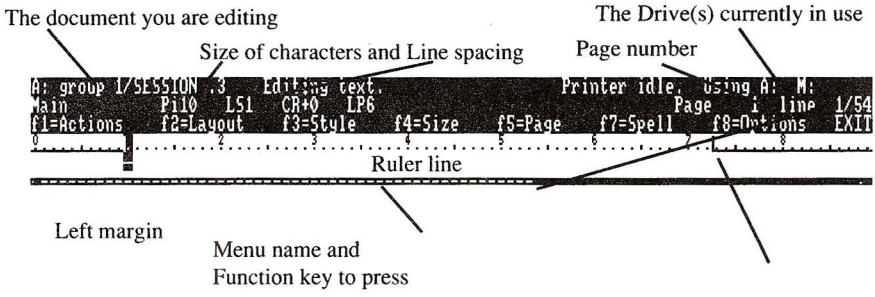
Don't worry about typing the letters in as capital letters – *whenever LocoScript needs something to be in capital letters, it automatically translates any lower case letters you type into capital letters.*

What you type writes over the `DOCUMENT.`*nnn* name. You will see a small cursor move along the line as you type. When you type the full stop, LocoScript automatically makes the rest of the main part of the name blank and transfers the small cursor to the extension so that the next thing you type is the first character of the extension. Finally, press the Space bar once or twice to clear the remaining characters of the `DOCUMENT.`*nnn* name.

If you spot a mistake in the name you have typed, then correct it exactly as you would correct text. In particular, you don't have to rub out all the way back to the mistake – you can just position the small cursor with the Cursor keys where you need to make the change and make the correction in the normal way.

• When you have the correct document name, press [ENTER] to tell LocoScript to go ahead with these details. LocoScript then clears away the Disc Manager Screen and opens up its Editor Screen, ready set up for the document you are going to create.

The Editor Screen



This is exactly the same screen as we saw in Session 2: the only difference is that we are now working on a different document.

A couple of the features on this screen need a bit more explanation.

The Ruler line: As we said before, the job of the Ruler line is to tell you where the left and right margins and the tab positions are. At the moment, it is just showing you the margins because no tabs have been set. The Ruler line you have here has been set up for use on standard A4 paper. The margins are 1 inch from each side of the page.

The Ruler line is marked out in such a way that it counts characters of a particular size – called the Scale. The Scale you have here is 10 characters per inch. From the numbers on the Ruler, you can work out the maximum number of characters of this size you can fit on each line or the number of these characters you can fit between two tab positions.

The oblong on the Ruler line is the Ruler cursor, which is used to tell you how far across the page you are working. As you type, you will see the Ruler cursor keep in step with the Text cursor.

The End-of-page line: This marks the point in your text where one page ends and another begins. A long document will have a number of End-of-page lines spread through it, but when you have just created a new document or your document is only very short, you will just see one End-of-page line – immediately under the last line that has been typed.

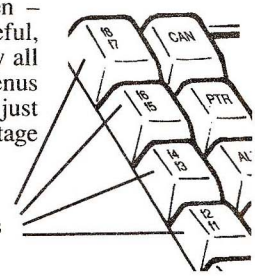
The End-of-page line has a special pattern to it to let you see how many blank lines there are left at the bottom of the page it finishes. This comes in useful, for example, when you want to see whether you could fit in a short paragraph on one page without moving any of the text over to the next or you want to work out how many blank lines to put at the beginning of a short letter so that it is neatly centred on the page.

The End-of-page line

Lines of text on the page

Blank lines at the bottom of the page

Spend some time getting used to the layout of this screen – because you will find the information it shows very useful, especially when you are refining how a document looks. By all means, try pressing some of the f-keys to see what menus appear – but when you have got a menu on the screen, just press [CAN] to clear it away again. Don't press [ENTER] at this stage or you might see some strange effects!



Function keys

Typing in text

Typing in text is just like typing on a standard typewriter. You simply press the key or the combination of keys for the character you want and this character is entered in your document and displayed on the screen.

LocoScript 2 handles a very wide range of characters, including Greek and Cyrillic letters – many more than the 100 or so characters on the print wheel supplied with the built-in printer. All the characters can be displayed on the screen but you will need to buy extra print wheels or a dot-matrix printer before you can print many of these special characters.

Typing the different characters

All the common 'Roman script' characters – like the characters this manual is using here – are typed by pressing the key with the character engraved on it, either on its own or with [SHIFT] held down at the same time. If you are about to type a number of 'Shifted' characters, then it's best to start by pressing the 'Shift Lock' key. This key 'holds down' [SHIFT] for you until you press either the Shift key or the Shift Lock key again – exactly like the Shift Lock on a typewriter. Alternatively, if what you are about to type is a number of capital letters, you can lock into Capitals by holding down [ALT] and pressing [ENTER]. LocoScript then converts any lower case letters you type into capital letters – until you hold down [ALT] and press [ENTER] again. (It also shows `Caps` in the top righthand corner of the screen.)

There are a number of other characters – including ÷, various fractions and superscript numbers – that you can type in addition to the ones engraved on the keys. These characters are typed by holding down either [ALT] or [EXTRA] at the same time as pressing the key, some of them with [SHIFT] held down as well.

When you want to type text in a foreign language that uses Greek or Cyrillic letters or you want to use some of the special symbols, what you do is slightly different. Before you start typing this text, hold down the [ALT] key and press one of the f-keys, depending on which set of characters you want to use. This special key combination puts the keyboard into a special mode called a 'Super Shift', in which the keys produce different characters. The keyboard stays in this mode until you hold down the [ALT] key and press [f1] whereupon the keyboard goes back to producing Roman Script characters.

When you are using one of the special Super Shifts, this too is shown in the top righthand corner of the screen – as `Gre`, `Cyr` or `Sym`.

The full range of characters you can type and which keys you need to press to type these are explained in Appendix III. Turn to page 321 and spend some time seeing what characters are available and what you do to type them. However, it is only fair to remind you that you won't necessarily be able to print all the characters you want on your printer. (For further details, see the Appendix III or the printer's own manual, when you are using a printer other than the one supplied with your PCW.)

Putting in accents, footnotes etc.

If you want accents on letters, LocoScript can do that as well. You can give any letter any one of 15 different accents by typing first the accent and then the letter. (If you just want the accent on its own, type the accent and then press [ENTER].) Do try this out: the key combinations for the accents are also given in Appendix III. For example, you will see that an acute accent is typed by holding down [EXTRA] and pressing E; an umlaut is typed by holding down [EXTRA] and pressing W.

The accented letter will be displayed on your screen and entered in your document as a single character. However, again you won't necessarily be able to print all the accents you require. Many of LocoScript 2's accents aren't available on every printer.

LocoScript also includes a variety of raised numbers in its set of characters but if you plan to type mathematical or chemical formulae or if you want to have numbered footnotes in your documents, you may need another of LocoScript's facilities – Superscripts and Subscripts. Putting these into your text is covered in Session 10.

Practising – and correcting

Practise typing text into a LocoScript document. You can do this in a variety of ways. For example, you can simply type away at whatever comes into your head or you can open a page of a book at random and just copy it. Either way, you should soon get used to the feel of typing and to LocoScript wrapping words from one line to the next for you.

As you type, do keep one eye out for how LocoScript is keeping track of what you do. Watch the Ruler cursor move along the Ruler line in line with the Text cursor. Notice how the line number at the top of the page clocks up and how the middle

section of the End-of-page line gets smaller as you add extra lines to your text. Being thoroughly familiar with what these markers do, will help you when you come to make changes to your document. Also notice how LocoScript automatically moves on to the new page. (But don't worry for now about when it decides to move onto the next page: that's covered in Session 16.)

If you make any mistakes or you want to change anything, correct these exactly as you did in Session 2 – by using the Cursor keys [←] [→] [↑] [↓] to position the Text cursor where you want to make the change (again, notice what happens to the Ruler cursor and the page and line numbers as you do this) and then using [←DEL] and [DEL→] to rub out characters you no longer want, before typing in fresh characters. Remember when you are moving the Text cursor that its true position is marked by the lefthand edge of the Cursor blob.

Notice how LocoScript continually re-adjusts your text as you work so that your document is always correctly laid out up to where you are currently working – even taking back words onto the previous line when there is now room to fit them in.

Saving the new document

When you have typed in all the text you want and made any corrections, the time has come to save (and perhaps print) your new document.

Press [EXIT]. (Remember, [EXIT] is always the key to press to tell LocoScript that you want to finish the current task. The word EXIT at the end of the third Information line is to remind you that this is the key to press.) LocoScript then puts up its Exit menu:



The four options give different results.

Finish edit saves your document on disc so that you can open it up and change it or print it sometime later. You are returned to the Disc Manager Screen.

Save and Continue saves your document on disc but immediately returns you to the Editor Screen with this showing the same part of the document as it was when you pressed [EXIT]. The Text cursor also goes back where it was.

This option is most useful when you are doing a lot of work on a document and you don't want to lose the work you have done if your PCW fails, because of a sudden power cut, for example. If you resume work on a document after a failure of this kind, you start again with the last version you saved. (We suggest saving your work often – at least about once an hour – to avoid accidentally losing it.)

Save and Print saves your document on disc and then puts you straight into the menu that is used to print it out. This is useful when you want to print a copy of the

Screen. `Save and Print` isn't the only way – or the best way – of printing a document. We show you in Session 4 how to print a document without first editing it.

Note: The `Save and Print` option isn't included if there isn't a printer connected to your PCW or the printer isn't connected properly – or it is already printing.

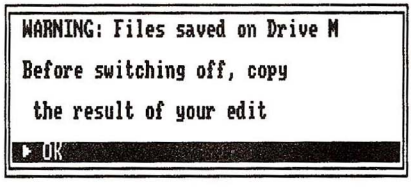
`Abandon edit` throws away all the work you have done, then returns you to the Disc Manager Screen. Nothing is saved on disc. This is the option to take when you want to return to the version of the document you had before you started editing.

The Exit menu is a 'Commands' menu – which, you will remember, means that you select an option from this menu by pointing the arrow at the option you require (if necessary, by moving the Menu cursor to this option) and pressing [ENTER].

There are two ways of moving the Menu cursor: you can either use the Cursor keys or you can type the letters written in capitals in the option you require. *(This is true for most of LocoScript's menus.)* For example, you can move the Menu cursor from `Finish edit` to `Save and Print` either by pressing [↓] twice or by typing `SP`.

In this case, we are going to select `Finish edit`. This will often be the option you want because this simply saves a copy of the document on disc, and so to make things easier for you, LocoScript pre-selects this option for you. If you have changed this selection, then simply type `F` – the capital letter in the menu option. Then press [ENTER]

As LocoScript saves your document, you will see the light on one of your disc drives flash on and off as your document is written onto the disc. Unless, that is, you have chosen to save your document on Drive M, the Memory disc: then you won't see your document being written onto the disc but you will see a message like this on the screen:



This is one of the 'Alert' messages LocoScript uses to 'alert' you to what is going on. A number of these let you know when an error has occurred (so it is a good idea when you see an Alert that you don't recognise to look it up in the Troubleshooting section – Appendix V).

This particular Alert reminds you to copy the document you have saved on Drive M to one of your discs as soon as possible. The Drive M is wiped clean the moment your computer is switched off or reset and anything stored there is lost. Even the

briefest of power cuts will lose any work stored on Drive M – so never put off saving anything important on disc.

Press [ENTER] to clear the message off the screen.

• Notice when you return to the Disc Manager Screen how the Group cursor is still on your chosen group and the File cursor is on the document you have just created. LocoScript always leaves these cursors in place so that you can easily use the same document again.

Session summary

In this session you have seen:

- How to pick out a particular group on the Disc Manager Screen
- How to create a new document and set its name and the group it is stored in
- How the Editor Screen is laid out and what information is displayed on the screen
- Where to look to see what character size, line spacing, margins etc. you are using
- Where to look to see whereabouts in your document you are currently working
- How to type the full range of characters LocoScript 2 provides, including accented letters
- What all the choices are when you want to finish editing and how to select the option you want

Session 4

Printing

Producing documents on a word processor is pointless unless you also know how to print them out, ie.

- how to get the printer ready for you to start printing
- how to tell LocoScript which document you want to print out
- and last, but by no means least, what to do when you run into problems, such as the paper becoming jammed. (Printers are, unfortunately, very prone to problems – particularly when you are not very experienced in using them.)

In this session, we describe how to print out documents on the printer supplied with your PCW and what to do when things go wrong. We will show you how to print a single copy or multiple copies of a document and how to print individual pages, rather than the whole document.

At every stage in printing, LocoScript helps by setting up everything in advance for the type of paper it expects you to use. At the moment, this is A4 sheets of paper: we show you how to prepare for using different sorts of paper and how to use a different type of printer later (in Sessions 20 and 23). Until then, keep using A4 paper and the PCW printer – because this makes printing quite straightforward.

In this session, you will be using your Start-of-day disc as the Data disc – simply because all the example documents for this tutorial are are stored on this disc. When you use your PCW for your own work, you will, of course, be printing documents stored on a 'real' Data disc like the Documents disc you prepared in the preparatory session (page 10).

• If you follow the instructions given here but nothing is printed or the paper becomes jammed in the printer, turn to the section called 'What can go wrong' on page 79 and follow the instructions there. This should cure the problems for you.

Note: None of the actions described here will be available if you don't have a printer properly connected to your PCW. The printer should be plugged into your PCW before you switch on. See Part I, Chapter 1 for details.

The other thing to check when printing is that you have a spare printer ribbon. When the ribbon runs out, printing stops and the system freezes so that you don't lose the text you were about to print. The only way to unfreeze it again is to put in a new ribbon.

Printing a document

There are two ways in which you can print out a document.

If you have just been working on a document, then you can print out copies of this document by selecting the `Save and Print` option from the Exit menu, and pressing [ENTER]. We saw this in action in Session 2.

But the only document you can print out using `Save and Print` is the document you have just been working on. The general way to print out documents is from the Disc Manager Screen (that is, the screen that lists all the files and documents).

The two methods are actually very similar, so what we shall look at here is printing from the Disc Manager Screen. `Save and Print` option in fact just takes you into the process of printing out from the Disc Manager Screen with the document already selected. The first step is therefore to display the Disc Manager Screen: if you are not sure how to do this, turn to page 41.

The next step is to put the Data disc with the document on it into one of your disc drives. For this tutorial session, the disc you want is your Start-of-day disc. If necessary, replace the disc in the drive by the one you want to use: remember to press [f7] to tell LocoScript 2 that you have changed the disc.

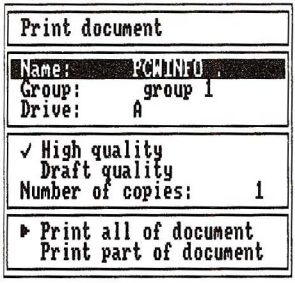
The document we are going to print is called `PCWINFO` and it is stored in `group 1` on your Start-of-day disc. To tell LocoScript that you want to work with this document, you have to pick it out with the File cursor – the band of highlighting in the lower part of the screen. As we have said before, all cursors in LocoScript are moved with the Cursor keys – [←] [→] [↑] and [↓]. So to start with, move the File cursor to the column you want by pressing the [←] and [→] cursor keys. (You will see the Group cursor towards the top of the screen move in tandem with it.)

Don't worry if the group isn't displayed at the moment, just keep pressing [→] – or [←] if pressing [→] doesn't bring the column onto the screen – until the column you want is displayed. The groups are displayed in the order Drive A (first to last), Drive B (first to last) and then Drive M (first to last). You will see the lower part of the display scroll across your screen as you keep pressing these keys. The only reason the group you want won't be displayed is if you didn't put the right disc in the drive!

Once the File cursor is in the correct column, use the [↑] and [↓] cursor keys to position it over the document you want to print – `PCWINFO` in this case.

Printing one copy of the whole document

When the File cursor is over the document you want, press the 'P' letter key. (You should find P for Print easy to remember, but if you are ever unsure, there is `P=Print document` on the second Information line to remind you.)



LocoScript now puts one of its Selection menus on the screen. (If instead you see a message saying that the printer is Active, you still have some of the last document to print.) This is the same menu as you see when you take the `Save and Print` option – only here, we are going to look at the options in detail.

The top part of the menu shows you which document you picked out. Normally this will be the one you want, but if not, you have two choices:

- either press CAN (to abandon the menu), pick out the right document and then press **P** again
- or change the information in the top section of menu until it is correct

Editing the information in the menu isn't as difficult as it might sound but it is usually even easier just to press CAN and try again.

The lower part of the menu gives you a number of choices about how you are going to print this document. It already has a number of choices selected for you so that you can tell LocoScript to print one copy simply by pressing ENTER – *LocoScript menus are always set up ready to carry out the task you are most likely to want.* We shall look at these options in turn.

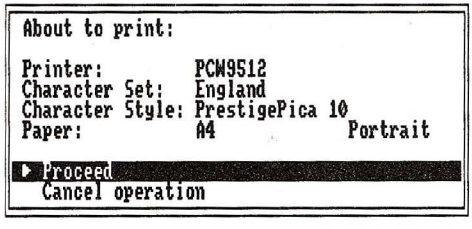
Setting High or Draft Quality

The High Quality and Draft Quality options in the middle of the menu allow you to select the quality of print.

On a dot-matrix printer, this is an important option – giving you the choice between producing 'High Quality' output slowly or less good ('Draft') quality output about three times as fast. On a daisy-wheel printer like the one supplied with the PCW9512, this option has no effect.

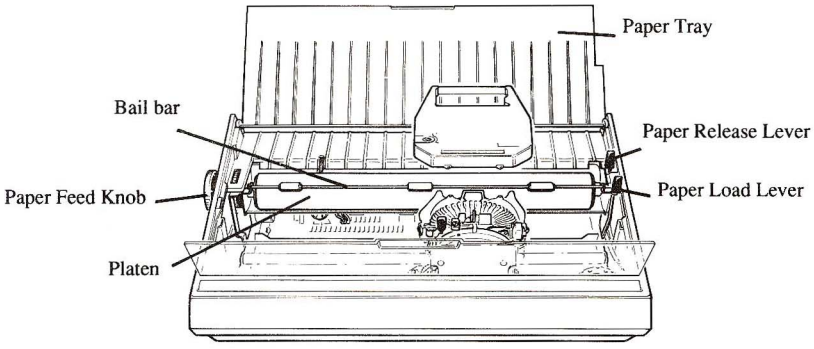
And printing

The rest of the menu is already set up for printing one copy of the whole document, so simply press ENTER to tell LocoScript to go ahead. Before it starts printing, you may well see a message on the screen. In particular, you will always see a message like this you are printing your first document since loading LocoScript 2.



This is just a reminder about the type of paper LocoScript is expecting you to use in your printer. Other messages will appear when you start to use different types of paper for your documents (see Session 20).

Don't clear this message off the screen yet. First, load a sheet of A4 paper by placing a single sheet of this paper with its top edge just resting against the back of the platen (the rubber roller) and its lefthand edge aligned with the third ridge of the paper tray. When the paper is in place, pull the Paper Load Lever fully forward and then let it back to its 'half-way' position. The paper is then automatically fed into the printer.



When the loading has been carried out correctly, the paper should be left in approximately the right place for printing. If you need to adjust its position at all, pull the Paper Release Lever forward and then ease the paper along/around the platen. When the paper is in place, push the Paper Release Lever back and push the Paper Load Lever right back, putting the bail bar back against the paper. Then press [EXIT], followed by [ENTER] (which clears away the message on the screen): the document will then start to print.

What you are printing is a three-page document. When it gets to the bottom of the first page, LocoScript will release the finished page and then wait for you to put in a fresh sheet of paper. Load another sheet of paper as before, push the Paper Load Lever back to put the bail-bar back on the paper and press [EXIT] to tell LocoScript that you have finished adjusting the paper. LocoScript will then begin printing the second page. Similarly, when it gets to the bottom of the page, you will need to load another piece of paper.

• You can use LocoScript for other jobs while the document is printing. You could, for example, create a new document or edit a document you prepared before. However, the disc holding the document you are printing must be left in the drive.

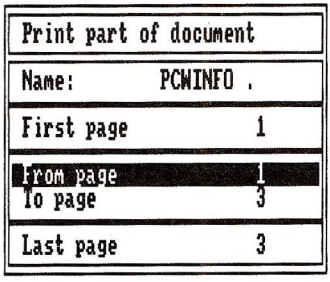
Printing part of the document

When all the document has been printed, check that the File cursor is still over PCWINFO (you will remember that LocoScript always leaves the File cursor where it was so that it is very easy for you to work with the same document again); then press P again. The same menu appears, and as before it is ready set up for printing one copy of the whole document. This time, we just want to print page 2 of the document – ie. we want to print part of the document rather than all of it.

Move the Menu cursor down to Print part of document – either by using the Cursor keys or by typing PP **once you have moved the Menu cursor out of the top section of the menu.** You have to move the Menu cursor out of this area first because otherwise your typing will simply replace the name of the file you have picked out to print. You must always check that the Menu cursor isn't over a part of the menu in which you can type a name or a phrase before you use this shortcut to moving the Menu cursor.

Notice how the arrow marking the selected option automatically moves to Print Part of document *as you get there. You will see this again in other menus.*

Now press [ENTER] to say 'go ahead'. LocoScript then displays a second menu, with slots for the page numbers of the first and the last page you want printed. It also tells you what the first and last page numbers of the document are. (The first page number is usually 1 but it doesn't have to be: we will show you ways of setting the first page number in Sessions 18 and 19.)



As we just want to print page 2, the page number of both the first page we want printed and the last page needs to be set to 2.

Put the Menu cursor on From page, type 2 and then press [ENTER]. This sets the first page to be printed as page 2. Now move the Menu cursor to To page, type 2 and then press [ENTER]. This sets the last page to be printed as page 2.

Notice how pressing [ENTER] after the number hasn't made the menu disappear. The job [ENTER] does here is to 'enter' the number – ie. to tell LocoScript that you have finished typing this information. You press [ENTER] again to tell LocoScript to go ahead.

When all the details are correct, load a sheet of A4 paper into the printer and press [ENTER] followed by [EXIT]. LocoScript will then start to print page 2.

(As before, you can do other work while your chosen section of the document is printing – provided that you don't change the disc in the drive.)

Printing multiple copies

When the page has been printed, check that the File cursor is still over PCWINFO and press **P** again – exactly as before. Once again the Selection menu when it appears is ready set up for printing one copy of the whole document.

This time, we want to print two copies of page 1. (You could print up to 99 copies if you wanted, but we will just print two.) Start by moving the Menu cursor down to Number of copies. Type 2 – the number of copies we want to make – and then press [ENTER] to 'enter' this number of copies. As before when you entered the first and last page numbers, the menu stays on the screen.

If you wanted to print this number of copies of the whole document, you would now press [ENTER] again (this time to tell LocoScript to go ahead), load a sheet of paper and start printing as before. But as we only want two copies of page 1, move the Menu cursor to Print Part of document and set the first and last page number as before – only setting both of these to 1, rather than to 2.

When these details are correct, press [ENTER]. Now put a sheet of A4 paper in the printer as before and LocoScript will then start to print page 1. When it has finished, load another sheet of paper, push the Paper Load Lever back, press [EXIT] – and the second copy of page 1 will be printed. (As before, you could edit another document, say, while this is going on.)

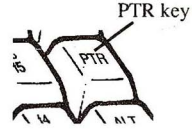
• LocoScript prints one copy of all the pages you selected before printing the next set. It doesn't print all the page 1's and then all the page 2's etc. etc.

Abandoning printing

It is always possible that after setting LocoScript off printing, you decide either that you don't want to print this document or that you don't want so many copies after all. For example, you may decide that you only want eight copies instead of ten.

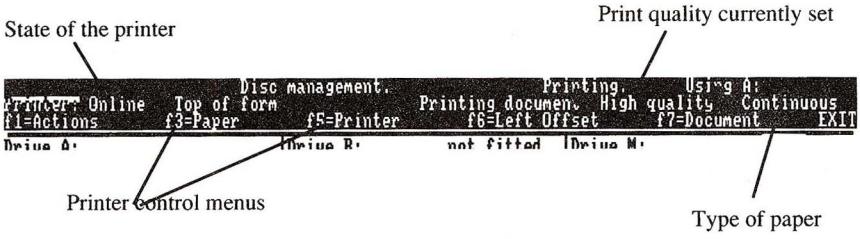
To see what happens, use the steps described above to start printing three copies of PCWINFO.

The first step in abandoning printing is to press the [PTR] key.



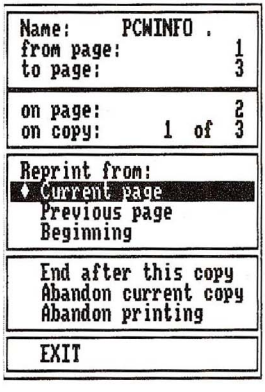
If you have decided that you don't want to print this document at all, do this immediately; if you have decided that you don't want all the copies you asked for, wait until LocoScript starts printing the last copy that you want and then press [PTR]. Pressing [PTR] interrupts the printing by putting LocoScript into its Printer Control State. LocoScript stops printing the document as soon as it can: the built-in printer will stop at the end of the current line, but other printers may go on printing for some time. Press [PTR] now.

While LocoScript is in its Printer Control State, all your actions are to do with controlling the printer. At first glance you might not notice that the screen has changed at all but if you look at the Information lines at the top of the screen, you will see that these have changed a lot:



Note: If you look at the screen while you are loading paper into the printer, you will see that the Information lines change to this pattern then as well. LocoScript automatically goes into Printer Control State when you load paper in case you want to make any special printer settings – and to give you time to get the paper straight.

The Printer Control menu you need in order to abandon printing is the Document menu. If you look at the Information lines at the top of the screen, you will see that this is brought onto the screen by pressing [f7]. Press [f7] now. The following menu should appear:



If you want to abandon printing altogether, the option you want is `Abandon Printing`. If you want to continue printing the current copy but you don't want any more copies after that, then the option you want is `End after this copy`. (The third option, `Abandon current copy`, is typically used when you have run into a problem such as the paper jamming in the printer: see below.)

The Document menu is a 'Commands' menu but it is subtly different from the Exit menu you have used in previous sessions to finish work on a document. In the Exit menu, the option that is currently selected was the one picked out by the arrow. Here, it is picked out by a diamond. We will be looking at this type of menu more closely later (Session 12).

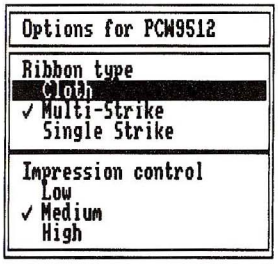
When the Document menu is displayed, the option that is selected for you is the first of the Reprint options. So move the Menu cursor to the Abandon option you require; then press [ENTER] to tell LocoScript to carry out this action. If you have chosen to finish the current copy, the menu will remain on the screen in case you want to select one of the reprint options (see page 80). To continue, move the cursor to EXIT and press [ENTER] again.

Important: Before you can print any more of the current document or select another document to print, you must leave Printer Control State. Do this by pressing [EXIT]. As you will remember, [EXIT] is always the key to press when you want to stop doing one type of task and go back to what you were doing before.

Adjusting the print strength

As you look at the printed copies you produce, it is worthwhile considering whether the text on them is lighter than you want or too dark or just about right – ie. whether you think the print strength is right.

LocoScript is automatically set up to give you a medium strength of printing, but you can readily change this by using another of the menus that are available when LocoScript is in its Printer Control State – the Options menu. This is brought onto the screen by pressing [f8]. Press [PTR] and then press [f8] to display this menu now.



This menu has two parts – one which deals with the type of ribbon you have in your printer, and the other with 'Impression Control' (ie. print strength). This is a Settings menu and so the current settings are ticked. As you see, LocoScript expects you to use a 'Multi-strike' ribbon and is set up to produce a Medium print strength.

The part of the menu that we are interested here is the Impression Control section. (The Ribbon options are only important if you use a different type of ribbon in your printer, because the standard PCW9512 ribbon is a multi-strike ribbon.)

All you need to do to set the print strength you want is to move the Menu cursor to the option you require and press [⊞] so that this option becomes ticked. If you want your printed text to be darker, then you should select `High`; if you want it to be lighter, you should select `Low`. When the print strength you want is ticked, press [ENTER] to clear away the menu, then press [EXIT] to leave Printer Control State and return to whatever you were doing before.

What can go wrong

This section is mainly of help when something actually does go wrong as you try to print a document. However, read through it now and follow the instructions. Then you will feel much more confident that you can cope when you run into a problem.

• Nothing is printed

A printer needs to have everything set right before it will start to print a document. Normally, LocoScript automatically looks after all these settings for you and, provided you follow the instructions correctly, all should be well. However, it is very easy, especially when you are inexperienced, to miss out a step or press a key that you didn't mean to – and then your printer may refuse to print anything.

There is no need to panic. All you need do is go through the following check list, checking and putting right anything which is not set correctly.

Note: If you do all these checks correctly and still nothing prints, consult your dealer because it is likely that the printer itself is faulty.

1. Check that there is a ribbon in the printer

2. Check that there is paper in the printer and that the bail-bar is pushed back

(If you are not sure what the bail-bar and the platen are, look at the picture of the printer on page 74.)

3. Press [EXIT]

***** Your document may well start to print now. If it doesn't, press the** [PTR] **key. This is just above the** [ALT] **key. Press this key now.**

As we explained above, pressing the [PTR] key puts you into LocoScript's Printer Control State through which you control how your printer is set up.

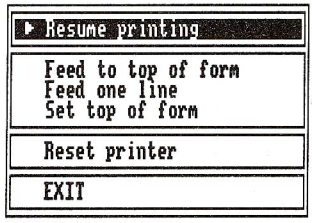
4. Check that the printer is ready to print

The printer can't print anything while:

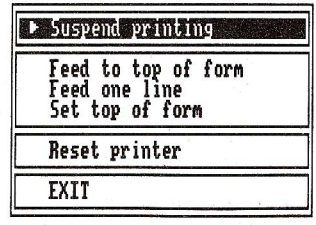
- it has detected that there is 'No paper' in the printer (**Note:** This is only possible while you are using Continuous stationery. When you are using Single sheet stationery, it is up to you to check that you have paper in the printer before you print.)
- it is 'Waiting for paper' – typically because you told the printer to expect single sheets of paper but you actually loaded continuous stationery, or
- printing is 'suspended'
- it has detected 'Ribbon out', because your ribbon cassette is exhausted

Check the second Information line to see which of these states your printer is in. If you see 'No paper', just load some paper in the printer – that should clear it. If you see 'Ribbon out' then you must replace the ribbon cassette. If you see 'Waiting for paper' or 'Printing suspended', press [f1]. Press [f1] now. This brings the Actions menu onto the screen, which will look either

like this:



or this:



When the printer is either 'Waiting for paper' or printing is 'suspended', the top option in the menu is `Resume printing`. When the printer is ready to print, the top option in the menu is `Suspend printing`.

In either case, the top option is automatically selected for you (shown in the usual way by the arrow next to this option). So when you want to make the printer ready to print, simply press [ENTER] to select `Resume Printing`. If the printing wasn't suspended, just press [CAN] to clear away the menu.

5. Press [EXIT]

• The paper jams in the printer (or you suddenly realise that you are not printing on the right sort of paper)

1. Press [PTR] – to put LocoScript into its Printer Control State. (Do this now.)

Printing will stop **as soon as possible – usually at the end of the line.**

2. Clear the paper out of the printer. Reload with fresh paper, but don't press [EXIT] yet.

3. Press [f7]. This brings the Document menu onto the screen.

The Document menu normally gives you a choice of three places in the document at which to re-start printing – the beginning of the document; the beginning of the current page; and the beginning of the previous page. (The `Previous page` option is only available when it is appropriate.)

Note: Some printers print a large number of characters between you pressing the [PTR] key and it actually stopping. For this reason, it is always a good idea to check the page number of the 'current' page, rather than assume that this is automatically the page that was being printed when the problem happened.

The first option – Reprinting from the beginning of the current page – is pre-selected for you. You can see this from the diamond beside it. Move the Menu cursor to the option you want – automatically moving the diamond as well – and press [ENTER]; then move it to the EXIT option and press [ENTER] to leave the menu. Alternatively, abandon printing either altogether or just the current copy (see page 77).

When you leave the menu after selecting one of the Reprint options, LocoScript 2's first action is to display an Alert message.

Don't clear the Alert off the screen yet. First, load paper into your printer and/or adjust its position so that printing will start at the top of the page. If you are using single sheets of paper, the paper should automatically be positioned correctly: with continuous stationery, you may have to turn the Paper Feed Knob on the side of your printer until the paper is in the right place.

When the paper is in position, press [ENTER]. The position you set the paper in is recorded as the position to be used for the first line of text.

4. Press [EXIT]

LocoScript then starts reprinting the document from the point you picked out.

• The printer suddenly stops printing

The chances are that the printer has spotted the end of the paper you are feeding into it, and has stopped so that there is no risk of accidentally printing on the platen.

Don't replace the current page with fresh paper yet – because there is still some of the current page waiting to be printed. First, press [PTR] to enter Printer Control State and then press [f1] to bring the Actions menu onto the screen. This menu now has an extra entry that you won't have seen before – `Finish current page`. Move the Menu cursor to this option and press [ENTER]; then press [EXIT]. LocoScript then finishes printing the current page before stopping again.

When it stops again, load fresh paper into the printer. When the paper is in position, press [f1] to bring the Actions menu onto the screen again. (Loading the paper has automatically put you back into Printer Control State.) This time, select the `Resume printing` option at the top of the menu and press [ENTER]. Then press [EXIT] to leave Printer Control State. LocoScript then carries on printing your document.

• The other reason your printer may stop suddenly is if it detects that you have reached the end of the ribbon in the current cassette. This ribbon cannot be used any further and so printing automatically stops. In fact, LocoScript effectively freezes so that you won't loose any of the text you were printing.

The only way to unfreeze it is to insert a fresh ribbon – which is why we recommended you to always keep a spare ribbon cassette.

Session summary

In this session, you have seen:

- How to print out a document from the Disc Manager Screen
- How to print just part of a document
- How to print out multiple copies of a document
- What to do when your printer apparently refuses to print anything
- What to do when the paper gets jammed

Session 5

Changing a document – I: Small Changes

In this session and the next, we shall edit a document – that is, we shall take a document that is already stored on disc and change it.

In this session we shall:

- see how to start editing a document
- look more closely at the small-scale insertions and deletions introduced in Session 2
- and see how to move from one place in your document to another efficiently.

In the next session, we will see how to make more drastic changes to your document, for example, by moving whole paragraphs from one place in your document to another.

We will again be using one of the example documents stored on the Start-of-day disc in this session.

Starting to edit a document

The starting point for editing a document is always the Disc Manager Screen, that is, the screen that lists all the files and documents that are available. If you are not sure how to display this, turn to page 41.

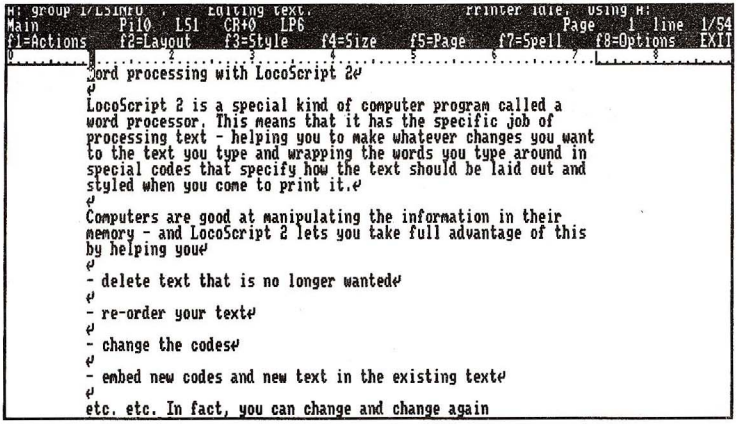
In addition, you must work with the disc that has the document stored on it in one of your disc drives. For this tutorial session, the disc you want is your Start-of-day disc and you want to use it in Drive A. If necessary, replace the disc in the drive by the one you want to use. Remember to tell LocoScript that you have made this change by pressing [f7]

The document we are going to edit in this session is called `LSINFO` and it is stored in `group 1` on your Start-of-day disc. Pick this document out with the File cursor – exactly as you did in the last session.

When the File cursor is in the right position, press the 'E' letter key. (Remember E for Edit – or check the second Information line when you are unsure.)

LocoScript now puts one of its Selection menus on the screen, to give you the chance to confirm that you selected the right document. If necessary, either press [CAN] to abandon the menu and pick again or edit the details in the menu (see Session 4).

Press [ENTER] to tell LocoScript to go ahead, once you've checked that the details are right. LocoScript then clears away the Disc Manager Screen and puts up the Editor Screen, with the document you have selected already in place. Your screen should look like this:



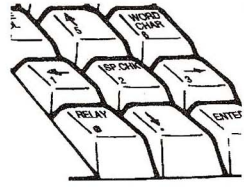
This is the first 28 lines of the document – 28 lines being the most that can be displayed on the screen at any one time. The Text cursor is right at the top of the document. Notice how LocoScript has laid out the document neatly between the margins marked on the ruler.

Moving around your document

As you will remember from Session 2, before you can change the text at a particular point in your document, you have to move the Text cursor there.

One way of moving the Text cursor, as we have seen, is to use the four Cursor keys, [←], [→], [↑] and [↓].

The Cursor keys



These keys are mainly used to move the cursor over the part of the document you can see at the moment. But keeping these keys pressed when the cursor reaches the edges of the screen makes the text of the document move – 'scroll' – so that you can see the next part of the document.

If you hold down [SHIFT] and/or [ALT] at the same time as pressing a Cursor key, you get a different type of movement. With [SHIFT], the Text cursor moves in the direction you expect but in very much larger steps. (Remember how we said in connection with moving the Group cursor that holding the [SHIFT] key down made the cursor move in

bigger steps?) With [ALT], the Text cursor doesn't move but the text on the screen does so that the Text cursor still finishes at a new place in your document.

Pressing the Cursor keys is not the only way of moving the Text cursor, nor is it always the best way. As you can imagine, holding down the [↓] key is a very slow way of moving from the first line of a long document to the last line. (Try it on this example document, if you like.) And there are some other movements that are not particularly easy with the cursor keys – for example, moving from the end of one line to the beginning of the next.

So LocoScript has some special, quick ways of moving from one place to another. One way is by using some special keys known as the Textual Movement keys. The other is by using a special menu option to move straight to a particular page.

Note: When you make a small move, the text of your document stays on the screen – perhaps scrolling a little to bring the part of the document you want to move to onto the screen. When you make a big move – for example, from the top to the bottom of the document, the screen will be completely cleared before the new section of your document is displayed. You will also see a message summarising the move you are making.

The Textual Movement keys



The Textual Movement keys all have names that suggest the sort of movement pressing the key will produce. You have already used [PAGE] to move to the beginning of the next page. [DOC] moves to the end of the document; [WORD] moves to the beginning of the next word; [LINE] moves to the beginning of the next line; [PARA] moves it to the beginning of the next paragraph; etc. etc. The one which you might not readily understand is [EOL] – which moves the Text cursor to the End Of the Line.

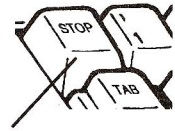
(**Note:** To LocoScript, paragraphs are blocks of text that are separated from each other by a blank line or by extra spacing after the Carriage Return (see Session 11). Addresses, for example, are therefore just one paragraph.)

Most of these keys have two Textual Movements engraved on them – for example, there's a key with both DOC and PAGE on it. If you just press this key, you will get the 'PAGE' action. To get the 'DOC' action, you have to hold down the [SHIFT] key as you press the key. *(Hold down the [SHIFT] key as you press the key whenever you want the upper of two actions or characters marked on it. We will remind you to do this in the initial stages of this tutorial by putting ([SHIFT]+. . .) after the key name.)*

Simply pressing a Textual Movement key (together with the [SHIFT] key if it is the upper action on the key that you want) moves the Text cursor forward through the document. When you want to move backwards through the document, hold down [ALT]

at the same time as pressing the key or the key combination. The Text cursor is then moved the corresponding distance back through the document.

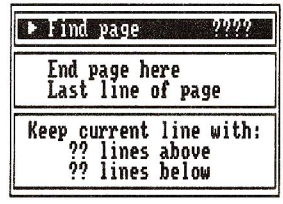
If pressing the key (or key combination) once doesn't move you far enough, press it again until the Text cursor is where you want it. To abandon a movement that you have started to make, press STOP, wait for LocoScript to pause and then press STOP again.



Stop key

• Spend some time trying out these various key combinations and seeing their effects for yourself. In particular, see how easy it is to recover after you have accidentally moved the Text cursor the wrong·way.

Moving to a particular page



You move the Text cursor to a particular page with the help of the Page menu, which is brought onto the screen by pressing f5.

The Page menu is another of LocoScript's Command menus and the command you want is the one at the top of the menu – `Find Page ????`. To use this option, you first check that the Menu cursor is on it and then you type the number of the page you want. So, for example, if you wanted to move to Page 2 of the example document, you would first press f5 to bring the Page menu onto the screen (as you have done already). Then, as `Find Page ????` is pre-selected for you, just type 2 – making the menu option `Find Page 2`.

When you have typed the number, press ENTER and then ENTER again. LocoScript then moves the Text cursor to the start of your chosen page (Page 2 in this case). While it does this, a message is displayed telling you about the move LocoScript is making.

Making small changes

Where the changes you want to make just involve deleting or inserting odd words and letters, the technique to use is the one we used in Sessions 2 and 3:

- move the Text cursor to the point in the document you want to change (Remember, the part of the cursor marking its true position is its lefthand edge)
- use ←DEL and DEL→ to rub out characters you don't want
- type in new characters

This is all very simple, especially as LocoScript always ensures that your document is correctly laid out **up to your current working position.** The text below your current working position isn't relaid until you move your working position

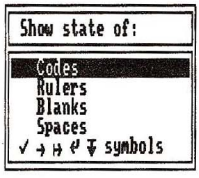
further down the document – or you press the [RELAY] key, whereupon the whole of the paragraph you are working on is relaid.

What we want to emphasise here is that it is always worth being very careful about positioning the Text cursor at the exact point in the document you want to make your changes: otherwise, you will probably have to make a further correction just to put this right. Remember, what you want to do is position the Text cursor so that its lefthand edge is at the precise point in the document where you want to make your changes.

The only difficulty you might have in deciding on the 'right' place for the Text cursor is when you want to add something to a table of information. The problem with a table is that it contains a lot of 'blanks' which space out the items in the table and which **look** exactly like spaces you type – but which aren't really part of the document at all. The margins around your text are also full of 'blanks'. The trouble is that if you start typing when the Text cursor is on a group of these blanks, LocoScript may insert what you type into your document in a very different place to the one you expect.

Showing the difference between spaces and blanks

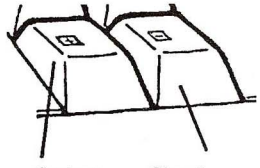
If you find this difficult to work with, then the answer is usually to show up the difference between these blanks and spaces that you have typed. To do this, press [f8]. LocoScript 2 then displays a menu similar to this:



This is the Editor Options menu which you use to set how much extra information is displayed alongside the text while you are editing the document. Each option of the menu refers to a different piece of extra information you can display.

The Options menu is one of LocoScript's 'Settings' menus. If the option has a tick beside it, it is said to be 'Set' and the information will be displayed; otherwise, the option is 'Cleared' and the information associated with this option won't be displayed. With all the options cleared, the screen shows only the characters that will be printed.

You can set as many of these options as you like. The keys you use to do this are known as the Set and Clear keys, and they are to be found in the bottom lefthand corner of the keyboard. The Set key is the one marked [⊞]; the Clear key is the one marked [⊟]. You will see these keys in action in other menus that give you a choice of settings.



- You set an option by moving the Menu cursor to the option you require and pressing the [+] key: this puts a tick beside the option.
- You clear an option that is set (ie. has a tick beside it) by moving the Menu cursor to the option and pressing the [-] key: this clears away the tick.
- You 'toggle' the setting of an option by moving the Menu cursor to the option and pressing the Space Bar.

The Menu cursor is moved in the usual way – either with the Cursor keys or by typing the relevant capital letters (see Session 3).

When you create a new document, the only one of these options that's set is the list of Symbols. The symbol you will recognise is ↵ – the special Carriage Return character used to mark where you have pressed the [RETURN] key. The other symbols will be introduced later in the tutorial. LocoScript automatically sets this option so that you can see where you have pressed the [RETURN] key.

The options that let you see which blanks on the screen are really part of your document are 'Blanks' and 'Spaces'. (The other two options come into later sessions of this tutorial.)

If 'Spaces' is set, all the places you have typed a space will be marked by ∴. You can then see all the space characters that you have put into your document. If 'Blanks' is set, all the unused parts of the screen are shown as dots. This includes the blanks immediately following a Tab.

Blanks as dots

```
.....This means that it has the specific job of processing text - helping you to ....
.....make whatever changes you want to the text you type and wrapping the words .....
.....you type around in special codes that specify how the text should be laid .....
.....out and styled when you come to print it.↵.....................................
.....↵.....................................
.....Computers are good at manipulating the information in their memory - and .....
```

Spaces as blobs

```
This∴means∴that∴it∴has∴the∴specific∴job∴of∴processing∴text∴-∴helping∴you∴to∴
make∴whatever∴changes∴you∴want∴to∴the∴text∴you∴type∴and∴wrapping∴the∴words∴
you∴type∴around∴in∴special∴codes∴that∴specify∴how∴the∴text∴should∴be∴laid∴
out∴and∴styled∴when∴you∴come∴to∴print∴it.↵
↵
Computers∴are∴good∴at∴manipulating∴the∴information∴in∴their∴memory∴-∴and∴
```

Either of these options will let you see which parts of the screen are really blank and which are spaces you have typed.

To demonstrate the effect of showing up the difference between blanks and spaces, we shall set both 'Blanks' and 'Spaces'. First type B to move the Menu cursor to Blanks. Then press the [+] key. The menu now has a tick beside Blanks. Now move the Menu cursor to the Spaces option (immediately below Blanks) and press the Space Bar. Now press it again a few times. The first time you press the Space Bar, a tick appears beside Spaces; the second time, the tick is cleared away; the third time, the tick re-appears; and so on. Finish with Spaces set.

Press [ENTER] to tell LocoScript to go ahead with this combination of extra information to be shown. LocoScript then rewrites the screen – taking account of the options you set. Notice the difference there now is between the blanks round the edges of the document and the spaces in the middle of it. The area in which you can expect LocoScript to move anything you type is the part of screen marked by dots.

For practice, press [/8] again – but this time use [+], [-] or the Space Bar to set the combination of `Blanks` and `Spaces` that you find most helpful. **Note:** If you save a document after setting any combination of the display options in this menu, this combination is also saved and re-appears the next time you edit the document.

Relaying after making changes

After you have made your changes, it is a good idea to press [RELAY] to relay the current paragraph so that you can see clearly the effects these changes have had.

At least, this is the case while you are a newcomer to word-processing with LocoScript. Once you are confident that the changes you make will have the right result, you can leave the relaying to LocoScript. As we mentioned earlier, LocoScript always ensures that your document is correctly laid out up to your current working position. It also checks, and if necessary corrects, all aspects of layout – the line breaks, the page breaks, etc. etc. – as it saves your document. This means you are guaranteed that, whatever state you leave your document in while you are editing it, it will always be neatly arranged on the page when you come to print it out or when you next edit it.

What this means in practice is:

- Each paragraph is checked and corrected as you move the Text cursor into the next paragraph.
- Everything is correctly laid out up to the last character you typed.
- The layout of your document is correct up to the point you have moved to by pressing one of the Textual Movement keys.

To get a suitable area of text to show this, move to the `c` of `codes` on the fifth line of the first proper paragraph and type `word processing`, followed by a space.

Move the Text cursor up and down between the line either side of the break. Use the [↑] and [↓] keys for this. LocoScript doesn't correct the layout while you do this so that you can cursor around the paragraph without the text moving.

Next move the Text cursor to the first letter of `the text` and type `all`. Instantly, LocoScript relays the paragraph up to the word you have just typed – though the rest of the paragraph is now a bit ragged. Now move the Text cursor down to the next paragraph. The moment you move the cursor onto the next paragraph, LocoScript relays the paragraph you have just left.

To see what happens to the layout of paragraphs when you move around the document by pressing [CHAR], [WORD], [PARA] etc., we need to put another break in the

document. This time, move the Text cursor to the g of good on the first line of the next paragraph and type very. Now start moving the cursor forwards through the text by pressing [CHAR]. Watch carefully what happens when the cursor moves into the area of the break itself. As you see, LocoScript is relaying your document character by character as you press [CHAR]. Next swap to pressing [WORD] ([SHIFT]+[CHAR]). Again, you will see LocoScript relaying your document, only this time it is doing it word by word.

```
special word processing codes that specify how all the text
should be laid out and styled when you come to print it.↵
↵
Computers are very good at manipulating the information in their
memory - and LocoScript 2 lets you take full advantage of this
by helping you↵
```

Moving the Text cursor with the Textual Movement keys always makes LocoScript tidy up your document, up to the current position of the Text cursor. This means that if you want to force LocoScript to relay your document right through to the end, all you have to do is press [DOC].

Throwing away unwanted changes

Finally, in this session, we shall see how to throw away all the changes that have been made since you started editing the document.

First, press [EXIT] to tell LocoScript that you want to finish work on this document (the current task). Then move the Menu cursor to Abandon edit and press [ENTER]. LocoScript clears away the document on the screen and returns you to the Disc Manager Screen. It doesn't save anything on disc.

To get the document back onto the screen, you have to edit it again – in the same way as we did at the beginning of this session. When the Editor screen appears, the document will be exactly as it was when you started editing it the last time.

Session summary

In this session, you have seen:

- How to select a document and open it for editing
- All the ways LocoScript has of moving the Text cursor from one position to another in a document
- What happens when you type in the 'blank' areas of your screen
- How to make it clear on the screen where you have typed spaces and where nothing has been typed
- When LocoScript adjusts the layout of paragraphs you have changed
- How to throw away all the changes you made

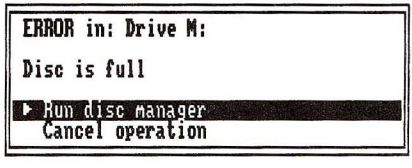
Changing a document – II: Large-scale changes

The changes we made to the example document in the last session were really very small. In this session, we shall make some quite drastic changes to a document – and really show the editing power of LocoScript. The sort of changes we shall make hardly bear thinking about when you're preparing text on a typewriter:

- duplicating sections of text
- moving sections of the text from one place in your document to another
- deleting a large block of text

The document we are going to edit in this session is a poem and it is stored in a document called `POEM.EG` in `group 1` of your Start-of-day disc. Display the Disc Manager Screen (see page 41) and if necessary, replace the disc in Drive A by your Start-of-day disc. Remember to tell LocoScript that you have made this change by pressing [f7]. Now pick out `POEM.EG` with the File cursor and open it for editing, exactly as you opened `LSINFO` for editing at the beginning of the last session.

Note: It is possible, when using the editing techniques described here, to create very large documents very easily. On occasion, there may no longer be room on the disc to store the document you are editing – particularly if you are working on a disc that doesn't have a lot of free space on it. You may also run out of space on Drive M, the Memory drive. When either of these happen, you will see a message like this:



Turn to Appendix V (the Troubleshooting section) to see what you should do when this message appears.

The common factor

All the operations we look at in this session – duplicating, moving and deleting sections of text – involve manipulating a block of text as a unit.

In each case, you mark out the section of text you are interested in and then you make a copy of this text in a special part of your computer's memory. This area of memory acts rather like a notebook: whenever you need the text again, you just make a copy of the relevant part of the notebook.

The different operations of duplicating, moving and deleting text come from the different actions you can take once you have marked out the block of text you are interested in.

The first choice is whether to retain the original text in the document. To retain it, you make a 'Copy' of this text – rather like you might make a copy in your notebook of a paragraph out of a book. Otherwise you 'Cut' it out – as you might take a Press cutting and stick it in your notebook.

The second choice is whether to 'Paste' a copy of the text in at some other point in the text.

- Duplicating is making a Copy and Pasting this back in
- Moving is Cutting out the original and Pasting a copy back in
- Deleting is Cutting out the original and not pasting it back in.

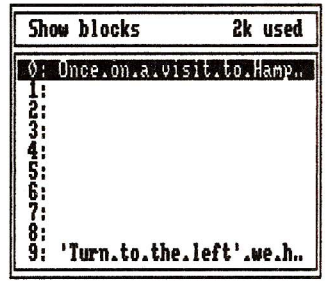
In each case, you start by marking out the block of text you are interested in and you store a copy of the text in one of LocoScript's 10 'Blocks' – Block 0, Block 1 ... up to Block 9. You can have as many of these 10 Blocks as you like in use at the same time, each storing a different piece of text – rather like a 10-page notebook.

When you come to paste the text back into this document, you paste in a copy of the text stored in the Block. This doesn't 'use up' the copy in the Block: indeed, you can paste in as many copies as you like. Think of this as copying from the notebook, leaving the notebook unchanged. LocoScript 2 continues to remember this text until you tell it to remember another piece of text as this Block – not just while you are working on this document but also for all other documents you work on before you switch off or reset your machine. (We will see in Session 15 how to use this to copy or move text between different documents.)

To demonstrate how these Block movements work, we shall Duplicate the first verse of the example poem, Move another verse and Delete a third verse. But, as marking out a section of text comes into all these actions, we shall start by marking out the first verse.

Note: If you ever forget which Blocks out of the 10 you are using and what you are using them for, press [f1] to bring the Editor Actions menu onto the screen and select the `Show Blocks` option:

The menu that appears lists the Block names that currently have something stored in them – ie. the ones you have used since you loaded LocoScript – together with the first few words of the text stored in each Block. Press [ENTER] when you have finished looking at the list to tell LocoScript you are ready to proceed.



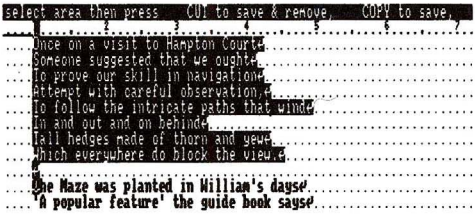
Marking out a section of text

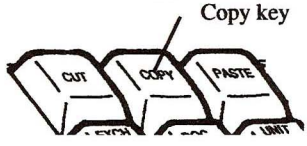
The first step is to move the Text cursor to the beginning of your chosen section of text. Because we want to duplicate the first verse of the poem, move the cursor right to the top of the document (if it is not already there).

Remember, the true position of the Text cursor is after one character and before the next and it is marked by the lefthand edge of the cursor. So you need to place the Text cursor so its lefthand edge marks the beginning of your chosen section.

Before going any further, check that the cursor is in the right place. *This is important because you can't change your mind part way through – except by pressing* [CAN] *and starting all over again.*

Now press [COPY]. A message then appears, both in the middle of the screen and on the third Information line, telling you to move the Text cursor to the end of your chosen section of text. As you move the cursor, the message in the middle of the screen disappears.





Next move the Text cursor to the end of the chosen section of text. Again it is the lefthand edge of the cursor that must mark the end of the section of text, so the cursor oblong finishes over the first character beyond the section of text. Remember to go beyond the final space, blank line or carriage return if you want to include this.

In our example case, move the Text cursor to the beginning of the second verse, ie. leaving the cursor oblong over the first character of this verse.

As you move the cursor, you will see LocoScript highlighting the section you are marking out. (You will still be able to see the Text cursor because this blinks.)

Once again, position the cursor precisely where you want it – or accept that you may have some tidying up to do. You can just use the four Cursor keys to make these movements, but using the Textual Movement keys we introduced in the last session can make moving to precisely the point you want very much easier.

Don't worry if you overshoot: just move the cursor back again to the right position. (The highlighting will shrink back, too. It always just marks the section between the first character you marked and the current position of the Text cursor, wherever that is on the screen.)

When the Text cursor is in the right place, the section of text is marked out ready to be Duplicated, Moved or Deleted as described below.

Duplicating the marked text – Copy and Paste

With the chosen section of text marked out as described above, press [COPY] – to tell LocoScript that you want to keep the original text in the document.

LocoScript then puts up another of its messages in the middle of the screen, asking you to type one of the numbers 0 . . . 9 or a letter. Like the message that appeared when you started marking out the block, the message disappears the moment you press a key (or if you wait too long), but don't worry, the whole message is repeated on the third Information line at the top of the screen.

The numbers 0 . . . 9, you will remember, are the 'names' of LocoScript's 10 Blocks; the letters refer to LocoScript's Phrases feature which we cover in a later session (Session 15).

All the operations we are looking at in this session – duplicating, moving and deleting – are Block operations, so you need to type a number – for example, 0. This tells LocoScript to remember the section of text we marked out as Block 0.

Now move the Text cursor to the place you want to put the copy. Again, remember the true position of the Text cursor is marked by the lefthand edge of the cursor. To duplicate the first verse of the example poem at the end of the poem, we need to move the cursor to the bottom of the page: move there by pressing [PAGE].

When the cursor is in position, press the [PASTE] key. Again, you get a message in the middle of the screen (and, more permanently, at the top of the screen) – this one, telling you to type the number of the block you want to insert. In this instance, type 0. LocoScript then 'pastes' in Block 0.



Paste key

```
We managed still to catch our train!↵
↵
Once on a visit to Hampton Court↵
Someone suggested that we ought↵
To prove our skill in navigation↵
Attempt with careful observation,↵
To follow the intricate paths that wind↵
In and out and on behind↵
Tall hedges made of thorn and yew↵
Which everywhere do block the view.↵
↵
■
```

Remember, pasting the text in doesn't 'use up' the copy you made. LocoScript continues to remember this section of text as Block 0 until you tell it to remember something else as Block 0 (or switch your machine off) and so you can paste in as many copies as you like.

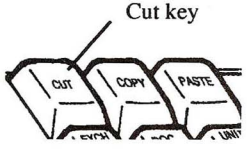
Moreover, there is no need to paste in the contents of a Block immediately – you can do any amount of editing before you paste a block back into your document.

Moving the marked text – Cut and Paste

To move a section of text, you mark this out, store it in a block and later paste a copy of the stored text in at a new position – in exactly the same way as you do when you want to duplicate a section of text. The only difference is that the original copy is deleted from the document – rather than left there.

To show the steps involved, we shall move Verse 2 to after Verse 3.

First, mark out Verse 2 as described above – moving the Text cursor first to the beginning of this verse, pressing [COPY] and then moving the Text cursor to the beginning of the third verse.



So far everything has been exactly as if you wanted to duplicate this bit of text. But now, when the Text cursor is in the right place, press [CUT] – don't press [COPY]. Pressing [CUT] tells LocoScript both to store a copy of the text and to remove the original from the document.

LocoScript then asks you to type one of the numbers 0 . . . 9 or a letter – exactly as before. Again, you want to type a number – so, type 9 to tell LocoScript to remember this section of text as Block 9.

Now move the Text cursor to the place you want to move the text to. For our example, move to the beginning of the 4th verse. (Again, remember that the true position of the Text cursor is marked by its lefthand edge.) When the cursor is in position, paste Block 9 in by pressing the [PASTE] key and typing the number of the block – exactly as you did before.

Once again, you can paste in this text anywhere you like, as many times as you like. However, pasting in this way gives you multiple copies of the text – it doesn't keep on moving the same piece of text around the document.

Deleting the marked text – Cut

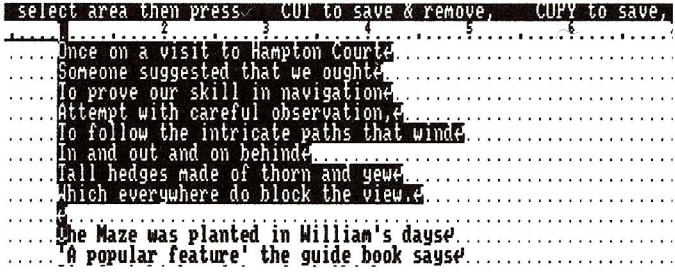
LocoScript has two ways of deleting a block of text.

The first – and the safer one – is to go through all the steps of moving a block of text from one place to another except for pasting in the block in the new position. In other words, you:

- mark out the section of text
- press [CUT]
- type the number of the Block this text is to be stored as, and
- never paste this block of text in again (unless you decide that you wanted this text after all!)

The other method is similar but less safe because there is no way that you can restore the text if you change your mind. To see this method, we shall now use it to delete the first verse of our much-modified poem.

Mark out the section of text you want to delete as before except press [CUT] instead of [COPY] after putting the Text cursor at the beginning of the chosen section. So to delete the first verse, move the Text cursor to the top of the document ([ALT]+[DOC]), press [CUT] and then move the cursor to the beginning of the second verse. As with the 'Copy' techniques, LocoScript highlights the section of text you are marking out.



When the cursor is correctly positioned, press [CUT] again. LocoScript then removes the highlighted text from the screen.

The text you have just deleted has gone for good.

Finally...

That's looked at the major types of editing changes you can do with LocoScript. In later sessions, we look at more subtle changes you can make to your documents – by using different types of characters and by laying the text out in special ways on the page.

Finish this session by pressing [EXIT] and then selecting the `Abandon Edit` option as at the end of Session 5 – so that you can come back and work through this session later as if for the first time.

Session summary

In this session, you have seen:

- How to duplicate a section of your text once or many times
- How to move a section of text from one place in the document to another
- How to delete a block of text
- That starting with [CUT] is much less safe!

Session 7

Keeping your discs organised

It is very easy to create document after document with no clear scheme suggesting the disc you store them on, the groups you keep them in or the names you give your documents. The result is rather like stuffing sheets of paper into drawers. While you don't have many sheets of paper, it is quite possible to find the one you want, but the moment your drawers start to get full, it is a hopeless task finding anything.

The solution with the drawers is to tidy them up, grouping together some sheets of paper and moving others to a different drawer. Similarly, the solution to your problem with discs is also to tidy them up. You can work a lot more efficiently:

- if you use different discs for different types of documents, rather like you would use the different drawers of a filing cabinet
- if you use the different groups on a disc like you would use different folders within the filing cabinet
- if you give your discs, groups and documents names that help you remember what information they contain.

In this session, we shall show you:

- how to get new discs ready for use
- how to move documents to a different disc or a different group
- how to produce copies of documents
- how to get rid of documents you no longer need
- how to give discs, groups and documents names, and
- how to set up and inspect a short description of a document

These are the basic tools that enable you to keep your discs organised.

We shall also show you how to make back-up copies of your more important discs – to keep in case of accidents, like someone spilling coffee over the disc.

Every operation in this session is carried out on the Disc Manager Screen – that is, the screen on which the names of your documents are displayed. Display this screen now. (If you are not sure how to do this, turn to page 41)

For most of the operations, we will be using the three Disc Manager menus called Disc, File and Group. The Disc menu for all the operations involving the whole disc; the Group menu for operations on a whole group; and the File menu for operations on individual documents. As always, the keys that you need to press to bring these menus onto the screen are displayed on the Information lines at the top of the screen.

About discs

First, a brief note about the discs you use in your PCW.

Earlier in this tutorial, we happily created some new documents without worrying about how much room these would take up on your Documents disc and whether there was enough space on the disc for them. In fact, each disc you have can only hold so much information, specified by its capacity. The discs you use can hold up to 720k of information (though not quite all of it can be used for documents). 1k of information is roughly equivalent to 1000 characters – or about 18 lines of text – so you can get about three-quarters of a million characters or 360 pages of A4 on each disc.)

(**Note:** 'High-capacity' discs are also referred to as 1 Megabyte discs – from their unformatted capacity.)

When the Disc Manager Screen is displayed, you can gauge the capacity of your discs (and the Memory disc, Drive M) at the top of each box summarising the contents of your drives. Also displayed here is the amount of storage space on the disc that is already being used to store files and documents and the amount of free space on the disc. If you look down at where the documents are listed you can see how big each document is, because each entry is followed by its size as some number of k. For example, the size of DISCINFO is given as 8k.

It's always important to be aware of how much free space there is on each disc you use. Otherwise you can waste a lot of time and go through a lot of unnecessary trauma trying to create a document or to store a copy of a document on a disc when there isn't enough room for it.

You also need to be aware of the amount of free space that is available on the disc when you edit a document. Although your edited document replaces the current one on disc, for safety, the new version is stored **before** the old version is deleted – so you have to have enough free space on the disc for the new version **before** you start editing the document.

Preparing a new blank disc

The first thing you need when you are re-organising your discs is a number of new discs ready to have documents stored on them.

Before anything can be stored on a new disc, it has be to 'Formatted': that is, the storage area on the disc you want to use has to be marked out electronically. New discs are not marked out ready for use and so they have to be formatted before you can use them to store documents. If you have just bought a number of new discs, you might like to format all of these now – so that they will be ready for use as Data discs whenever you want.

The procedure is as follows. If you have a new blank disc available, then use the instructions to format this disc now.

Start by taking out the disc(s) currently in the disc drive(s) and putting them to one side. The reason for doing this is one of safety. It is unfortunately very easy – even for experienced users – to format a disc that you didn't mean to, and the trouble with formatting a disc by accident is that it is wiped clean of all the data that was stored on it. Anything that was stored on a disc cannot be recovered after the disc has been formatted.

Now bring the Disc menu onto the screen by pressing [f2] ([SHIFT]+[f1]).

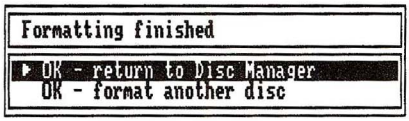


The Disc menu is a 'Commands' menu which, you will remember, means that the action that is carried out when you press [ENTER] is the one picked out by the arrow. The action LocoScript pre-selects for you is `Copy disc` whereas the option you want here is `Format disc`. So before you press [ENTER] you must move the Menu cursor (and hence the arrow) to `Format disc`. Then press [ENTER]: what happens next depends on whether you have one or two disc drives on your PCW.

The first thing that happens is that you see a message on the screen checking that you want to go ahead – because if you format the wrong disc by accident, you lose all the information that you have stored on that disc. To continue with the format, press [↓] to select `Format 720k disc using Drive A` and then press [ENTER].

Next you see a message telling you to insert your new disc. Hold the disc with Side 1 uppermost and check that the Write-protect hole in the top lefthand corner of the disc is closed and the one at the right is open. Then insert the new disc into Drive A, still with Side 1 uppermost. If you have two disc drives, this is your lefthand disc drive.

Now press [ENTER] again. The PCW then marks out the storage area on the disc. A message on the screen tells you how this is progressing. This message counts the tracks on the disc (160 tracks, numbered 0...159) as these are marked out. When it has finished, you will see the following message:



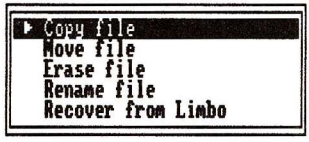
When this message appears, remove the disc in the drive and put it to one side. The new disc is now ready for use. If you don't want to format another disc, leave the Menu cursor on `return to Disc Manager` and press [ENTER]. You then return to the Disc Manager Screen. If you do want to format another disc, move the Menu cursor to `Format another` and press [ENTER] – then follow the instructions through again to format your next blank disc.

Copying, moving and deleting documents

Much of the process of tidying up a disc involves making copies that you store on a different disc or in a different group; moving documents from one place to another, either to a different disc or to a different group on the same disc; and deleting documents you no longer want.

Although these seem three very different actions, they are in fact very similar. In each case you pick out a document and tell LocoScript to make a copy of it and/or delete it. (Moving a document is making a copy and then deleting the original document.)

As a result, the steps involved in copying, moving and deleting documents are very similar. You start by using the File cursor to pick out the document you want to manipulate; then you press [f3] to bring the File menu onto the screen and select the action you want from this menu.



If the action you choose involves making a copy of the document, you then pick out the group you want to store the copy in. Finally, LocoScript puts up a summary of the action you have picked out so that you can confirm everything is correct before it goes ahead.

To show you how this works, we shall now Copy, Move and Delete some documents on your 'Working' disc. If necessary, replace the disc in Drive A by your Documents disc, with Side 1 uppermost. (Remember to press [f7] to tell LocoScript that you have changed the disc.)

Copying a document

There are a number of reasons why you might want a second copy of a document:

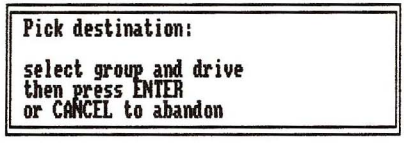
- you might want a back-up copy as a safety precaution, or
- you might simply find it more convenient to have a copy of a particular document on two different discs, or
- you might want a copy of one document as the starting point for a new document. It is often easier to copy an existing document and then edit it than to start a new document from scratch.

The first step is make sure that both the disc holding the document (the Source disc) and the disc on which you are going to store the copy (the Destination disc) are in your machine. This is not always possible on a single-drive machine: everything is fine when you want to make the copy on the same disc or on Drive M – but when you want to copy between discs, there is a special procedure to follow (see below).

What we are going to do here is make a second copy of DOCUMENT.000 (the document you created in Session 2) on your Documents disc. This makes the copy very straightforward because the same disc is both the Source disc and the Destination disc. Put this disc in Drive A. (Remember to press [f7] after changing discs.)

Now move the File cursor to the document you want to copy – ie. to DOCUMENT.000 in group 2 on Drive A. When the File cursor is over the document name, press [f3] to bring the File menu onto the screen.

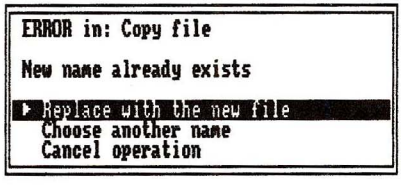
The File menu is another 'Commands' menu. Initially, the Copy file action has the arrow beside it, showing that option has been pre-selected for you. Tell LocoScript this is the action you want by pressing [ENTER]. LocoScript then puts up a message, both in the middle of the screen and on the third Information line, telling you to pick out the group you want to store the copy in – the Destination group:



Use [SHIFT] with the Cursor keys to move the Group cursor to this group. In our example case, you want to move the cursor to group 3 on Drive A. The message in the middle of the screen instantly disappears so that you can see what you are doing. When the Group cursor is over the right group, press [ENTER]. LocoScript then puts up a menu summarising the copying operation you have picked out.

Check the details on this menu carefully and, if necessary, correct them before pressing [ENTER] – or press [CAN] to abandon the copy. (Move the Menu cursor to the line of the menu you want to change and then edit the details on that line)

When you press [ENTER], LocoScript first checks whether there is already a file with the same name in the Destination group. If there isn't, LocoScript goes ahead and copies the document but if there is, it puts up the following Alert message telling you this:



Replace with the new file is selected for you because, in most cases, this will be what you want. However, you should only select this option if you are certain that you don't want the old version – because LocoScript has to delete the existing file **before** it can make the copy.

If you don't want to lose the old file, select Choose another name and press [ENTER]. You then get the chance to pick out the group and the name for the new file all over again. If you don't want to make the copy after all, select Cancel operation and press [ENTER]: LocoScript returns you to the Disc Manager Screen.

Copying between floppy discs on a single-drive machine

If you only have a single-drive machine and you want to store a copy of a document on a different disc, you have

- first to copy the document to one of the groups on Drive M, the Memory disc
- then replace the disc in the drive with your second disc and press [f7], and finally
- copy the document on Drive M to this second disc

There isn't any way of copying directly between two discs on a single-drive machine because direct copying needs both the Source disc and the Destination disc in the machine at the same time.

Moving a document

Moving documents from one place to another – either to a different disc or to a different group on the same disc – is a very powerful tool in re-organising your discs. To show the steps involved, we will now move `SESSION.3`, the document you created in Session 3, to the Memory disc (Drive M).

Again, you need to start by checking that both the Source disc and the Destination disc are in your machine. Here the Source disc is your Documents disc: this should be in Drive A. The Destination disc in this case is the Memory disc, which is automatically in Drive M. (Remember to press [f7] if you change discs.)

Now pick out the document you want to move (`SESSION.3` in this case) with the File cursor – exactly as you did above to copy a document. When the File cursor is over the document name, bring the File menu onto the screen by pressing [f3].

This time the option you want is `Move file` – so select this option with the Menu cursor and press [ENTER]. LocoScript then puts up a message telling you to pick out the group you want to move the document to – again, exactly as it did when you were copying a document.

Move the Group cursor to this group (group 0 on Drive M in our example case). When the Group cursor is over the right group, press [ENTER] (again, exactly as for copy). LocoScript then puts up a menu summarising the move you want to make.

Check (and if necessary correct) the details on this menu and then press [ENTER] – or [CAN] to abandon the move. Because the first part of the operation is making the new copy, LocoScript first checks whether there is already a file with the same name in the Destination group. If there is such a file, you will see the Alert message we told you about earlier in the section on copying – offering you the choice of cancelling the operation or replacing the existing file with the new copy. If there isn't a file with the same name, LocoScript simply goes ahead and moves the document.

Note: To move a document between two floppy discs on a single-drive machine, you need to

- move the document to one of the groups on Drive M, the Memory disc – as described above
- replace the disc in the drive with your second disc and press [f7], and finally
- move or copy the document on Drive M to this second disc

After you have moved a document to Drive M, you should immediately copy it to another disc. If you don't, you risk losing this document altogether when you switch off or reset your PCW – or when there is a sudden power cut.

Erasing a document

Another important part of tidying up is to erase documents and files you no longer need – such as one of the copies of `DOCUMENT.000`.

Of course, you must be certain that you don't need a document or file before you decide to delete it. If you are at all unsure about whether you need a file, leave it alone – because the chances are that you will need it after all. This applies in particular to files on Drive M and on your Start-of-day disc: if you don't know about these files, don't delete them because they are probably important to LocoScript.

Once again, the steps are very like those of copying or moving a document:

First check that the disc holding the document you want to get rid of is in your machine; then pick out the document you want to delete (`DOCUMENT.000`) with the File cursor. Press [f3] to bring the File menu onto the screen and select the `Erase file` option.

This time when you press [ENTER], LocoScript puts up a menu giving details of the document you have picked out – to give you the chance to confirm that you picked out the right one. As always, check (and if necessary correct) the details on this menu before pressing [ENTER] – or press [CAN] to abandon the copy.

LocoScript removes the document from the list of documents on your disc – but it doesn't actually erase it from the disc altogether. Instead, it puts the document into a state of 'Limbo' – as a 'Limbo file' – and it stays in Limbo until the space on the disc it is occupying is needed for another document.

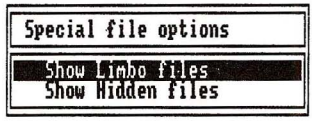
Because moving a document is a combination of copying the document and deleting it, LocoScript also leaves a copy of any document you move to a different disc in Limbo.

LocoScript has this Limbo state for documents as a safety net for you – so that you have the chance of recovering a document that you throw away by accident or lose in the process of moving it (eg. because you moved it to Drive M but forgot to move it onto another disc). The previous version of any document you edit is also held in Limbo on the source disc.

Recovering a document from Limbo

When you realise that you have thrown away the wrong document, you need to recover it from Limbo as soon as possible. The longer you wait, the more likely it becomes that LocoScript has removed the document completely in order to make room for some other document. LocoScript never erases any document unless you ask it to, but it will remove files from Limbo – oldest first – if it needs to.

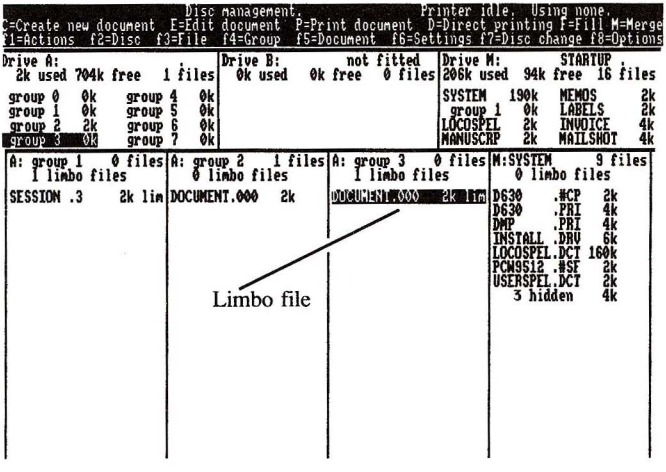
To recover the document, you should first get the Disc Manager Screen to display Limbo files. This is achieved through the Options menu. To bring this onto the screen, press [f8] ([SHIFT]+[f7]):



This menu is a Settings menu and so works in the same way as the Options menu that's used to display extra information when you are editing a document (see Session 5). Both entries refer to extra information that can be displayed on the Disc Manager Screen and when there is a tick beside an entry, this information will be displayed.

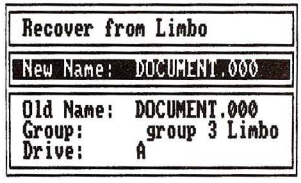
You have already been introduced to what Limbo files are. LocoScript's Hidden files are files on your Start-of-day disc that hold the LocoScript 2 program and data that the program needs to run. You won't have any Hidden files on your Data discs. (**Note**: You may also have some 'System' files on the Start-of-day disc and on Drive M: these files are also counted as Hidden files but their details are never displayed.)

You also 'set' and 'clear' the entries in the same way – pressing [+] to set an option, [-] to clear it, or the Space bar to 'toggle' between 'set' and 'clear'. (For details, see Session 4.) So to display Limbo files, put the Menu cursor on `Show Limbo files` and press [+] – and then press [ENTER] to tell LocoScript to go ahead.



Move the File cursor to the document you want to recover. It will still have its original name. So to recover the document we have just thrown away, move the File cursor to the entry `DOCUMENT.000 lim`.

Now press [f3] to bring the File menu onto the screen. Select `Recover from Limbo` and press [ENTER]. LocoScript now puts up a menu giving details of the Limbo file you have picked out and the name it will have when it is recovered. Normally, this will be the old name but if there is another document of this name in the group, LocoScript will leave the name blank for you to type in a new name.



Check the details in this menu are correct before pressing [ENTER]. LocoScript then brings your document back from Limbo.

Deleting a Limbo file

If a document contains confidential information, you might not want to leave it in Limbo after it has been erased – simply because it would be so easy for someone else to recover it. Instead, you will want to erase the document fully.

Suppose, you now wanted to get rid of `DOCUMENT.000` completely. First delete the document in the normal way, as described above: this makes `DOCUMENT.000` a Limbo file again. Then display Limbo files, point with the File cursor to the Limbo file you want to delete, and delete the Limbo file by using the `Erase` option of the File menu as before.

LocoScript then erases the document completely: it can't now be recovered.

Giving discs, groups and documents new names

The other improvement to make to the organisation of your discs is to ensure that everything has a name that helps you remember what it is used for. In particular, it is worthwhile making it easy to pick out related documents by giving them similar names.

In general, the characters you use in names are the capital letters A...Z and the numbers 0...9. (A full list of the characters you can use is given in Appendix III.) The name you choose for the group can be up to eight characters long; the name for either a disc or a document must have a main section of between one and eight characters, but it can also have an extension of up to three characters.

You give discs, groups and documents new names with the help of the Rename option of the appropriate menu (ie. the Disc menu to name a disc, the Group menu

to name a group and the Files menu to name a document). The steps you take in each case are very similar:

- You start by picking out the item you want to name with the Group and File cursors. In the case of naming a disc, this means checking that the Group cursor is over one of the groups on this disc; for the group and the document, you have to point specifically at the one you want to name.
- When the cursor is in place, bring the appropriate menu onto the screen.
- Select the `Rename` option and press [ENTER]
- Type in the new name in the slot at the top of the Selection menu that appears; check the remaining details and press [ENTER]

The item you picked out is then given the new name.

To show this in operation, we shall now give your Start-of-day disc the name STARTUP; then call the group 1 on this disc `EXAMPLES`; and finally change the name of the remaining copy of `DOCUMENT.000` to `SESSION2.DOC`

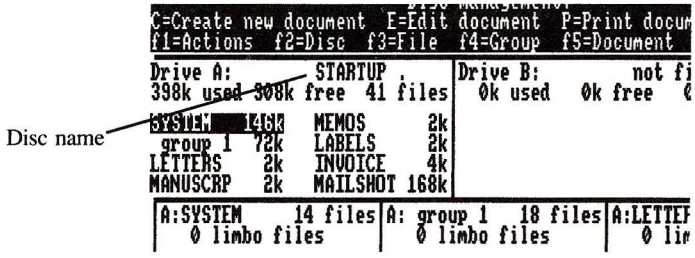
Naming the disc

To name your Start-of-day disc, insert this in Drive A (remember to press [f7] to tell LocoScript if you change the disc); then put the Group cursor on any one of the groups on this disc. Press [f2] ([SHIFT]+[f1]) to bring the Disc menu onto the screen.

Move the Menu cursor to the last option – `Rename Disc`. Press [ENTER]. LocoScript then displays a short menu containing a slot for the disc's new name. Type the new name for the disc – `STARTUP` in this case.

Don't worry about typing the name in capitals (LocoScript automatically converts any lower case letters you type into capitals) but do correct any mistakes before pressing [ENTER].

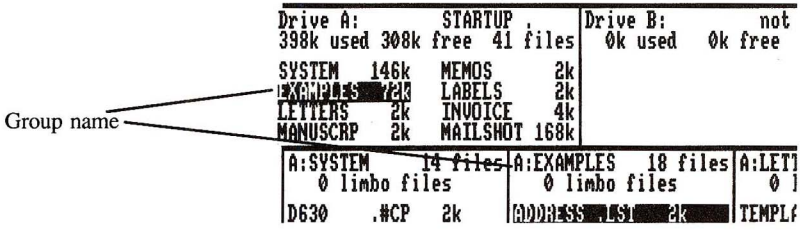
Pressing [ENTER] names the disc. Now, whenever this disc is put in the drive, you will be able to tell which disc it is just by looking beside the drive name at the top of the Disc Manager Screen. (It's a good idea to write this name on the disc label as well.)



Naming a group

Move the Group cursor to group 1 on Drive A – the group that's going to be given a name. When the Group cursor is in position, press [f4] ([SHIFT]+[f3]) to bring the Group menu onto the screen. Select `Rename` and press [ENTER]. LocoScript then displays a short menu containing a slot for the group's new name.

With the Menu cursor on the name slot, type the new name for the group – `EXAMPLES` in this case. Again, you don't have to worry about typing in capital letters. Check all the details and then press [ENTER]. This gives the group the new name – as you can see both where the contents of the disc are summarised and at the top of the column showing the names of the documents in this group.



Renaming a document

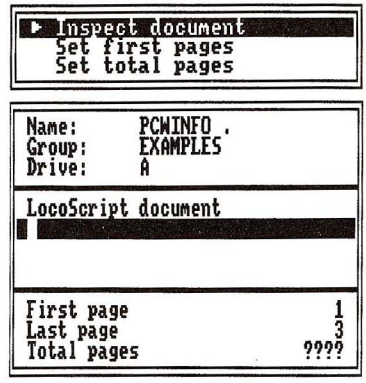
To rename the remaining copy of DOCUMENT.000 on your Documents disc, insert this disc (remember to press [f7] to tell LocoScript that you have changed a disc). Then move the File cursor over DOCUMENT.000 and press [f3] to bring the File menu onto the screen. Select `Rename` and press [ENTER]. LocoScript now puts up a menu containing a slot for the new name.

With the Menu cursor on the new name slot, type in `SESSION2.DOC` – the new name for the document. Once again, you don't need to worry about typing this in capitals. Check that the name you have typed and all the other details are right and then press [ENTER]. The document is now renamed.

Short descriptions of documents

The name of a document should give you some idea of what it contains, but on many systems you can only find out more by editing the document and having a look at it that way. With LocoScript, you have another option – which is to set up a short description of the document – known as the Identify text – which you can 'Inspect' from the Disc Manager Screen. (You can also edit this text while you are working on the document itself, by selecting the `Edit Identify` option in the f1 Actions menu.)

Setting up the description



Suppose you wanted to set up a description of PCWINFO, one of the example documents on your Start-of-day disc. To do this, put the disc in the drive (remember to press [f7]), pick out the document with the File cursor and then press [f5] to bring a new menu – the Document menu – onto the screen.

This is another of LocoScript 2's 'Commands' menus and the option we want here is Inspect document. This should be pre-selected for you (with the arrow beside it), so all you need to do now is press [ENTER]. You then get a further menu on the screen.

The job of this menu is to show you information about the document. The part of the menu we are interested in is the section in the middle – or, more specifically, the three blank lines. These are the lines on which you can set up your description.

Each line of the description can hold up to 30 characters and each line is set up separately. So you need to plan your description as three pieces of text, each up to 30 characters long. For example, as the description of PCWINFO, you might have:

```
Fundamental information on
using the AMSTRAD PCW
```

To set up this description, you move the Menu cursor first to the top of these three lines and type Fundamental information on; then press [RETURN] to move the Menu cursor to the second line and type 'using the AMSTRAD PCW'. You have now set up the description: simply press [ENTER] to tell LocoScript to remember it. LocoScript clears away the menu and returns you to the Disc Manager Screen.

Inspecting the description

To look at the description you have just set up, you pick out the document (PCWINFO) with the File cursor and then press [f5] to bring the Document menu onto the screen as before. Again, the option we want is Inspect document, so all you should need to do now is press [ENTER].

As before, you now see information about the document you picked out – but this time, you also see the description you set up.

Making back-up copies of discs

As well as keeping your discs organised, it is important to ensure you have a reserve – or 'back-up' – copy of every document you care about losing. This back-up copy should always be on a different disc in case the disc is damaged, eg. by someone scratching the disc.

The most straightforward way of making such back-ups is to make a copy of the whole disc on another disc – ie. a second disc with exactly the same information on it.

You have, in fact, already worked through all the steps involved in making a copy of a disc. During the preparatory session, you copied the supplied LocoScript 2 disc onto a new disc in order to make your Start-of-day disc. So instead of giving full details here, we shall just give an outline of the procedure you need to follow – because you can always turn back to the preparatory session for a detailed explanation of what is going on.

1 Take out the discs currently in the disc drive(s) and put them to one side.
2 Check that the Write-protect holes on the disc you want to copy are **open** but the ones on the disc you want to make the copy on are **closed**.
3 Bring the Disc menu onto the screen by pressing [f2] ([SHIFT]+[f1]).
4 Check that `Copy disc` is selected and then press [ENTER] to tell LocoScript to go ahead.

What happens next depends on whether you have a single-drive machine or a two-drive system.

Single-drive systems

On a single-drive system, it is also inevitable that the process of copying the disc will be carried out in a number of stages, each stage requiring you to first put in the disc you want to copy (the 'Source Disc') and then replacing this disc by the disc you want to make the copy on (the 'Destination Disc').

LocoScript first puts up a message checking that you want to go ahead and copy a disc. (This is a safety precaution against accidentally copying the wrong disc). Select `Copy 720k disc using Drive A` and press [ENTER]. LocoScript then starts displaying messages prompting you to insert the 'Source Disc' and then the 'Destination Disc'.

All you have to do is insert the discs when prompted, with Side 1 uppermost, and then press [ENTER] when you are ready for LocoScript to go ahead. Messages on the screen keep you informed of how the copy is progressing, by telling you which track is being written or read at the moment (Track numbers 0...159). These messages also tell you which stage of the copy you are at. Finally, when all the stages have been completed, LocoScript puts up another message asking you whether you want to copy another.

If you want to copy another disc, select `Copy another` and press [ENTER]: LocoScript then takes you through all the stages of copying another disc. If you don't want to copy another, select `Return to Disc Manager` and press [ENTER].

Two-drive systems

On a two-drive system, you use one Drive (Drive B) for the 'Source disc' and the other drive (Drive A) for the 'Destination disc'. So although LocoScript still reads the information a bit at a time, the discs stay in these drives throughout the process.

LocoScript starts by displaying a message checking that you want to go ahead and copy a disc. Press [ENTER]; then see a message prompting you to insert the 'Source disc' in Drive B and your 'Destination disc' in Drive A. Insert the discs as specified in the message, with Side 1 uppermost. Then press [ENTER] when you are ready for LocoScript to go ahead. LocoScript then copies the entire disc. When it has finished, you see a message asking you whether you want to copy another disc.

If you want to copy another disc, select `Copy another` and press [ENTER]: LocoScript then takes you through all the stages of copying another disc. If you don't want to copy another, select `Return to Disc Manager` and press [ENTER].

Note: You never need to format a new blank disc before you make a copy of a disc onto it. The disc is automatically formatted as part of copying the disc.

Using the Disc Manager while editing a document

Occasionally, you will need access to the Disc Manager Screen while you are editing a document – so to finish this session, we shall show you how this is done.

Start by opening one of the Example documents for editing – say, `LSINFO` – using the same steps as you used at the beginning of Session 5. Now press [f1] to bring the Actions menu on the screen. (You can see that [f1] is the key to press by looking at the second Information line.)



We used this menu briefly in Session 6 to see what Blocks we had set up. This time, the option we want is `Disc Manager`.

The menu is a 'Commands' menu – which, you will remember, means that the command LocoScript carries out when you press [ENTER] is the one picked out by the arrow. You move the arrow to the option you want by moving the Menu cursor, so move this to `Disc Manager` and then press [ENTER]. Do this now.

LocoScript displays the Disc Manager Screen and gives you access to all the Disc Manager menus, as you can see by looking at the Information lines. But it hasn't abandoned work on the document you are editing – it has just put it on one side for the moment, as you can confirm from the top Information line which has the message `A:EXAMPLES/LSINFO. Disc management whilst editing`

You can now carry out most of the actions that you normally carry out from the Disc Manager Screen – such as the Copying, Moving, Deleting and Renaming actions that we have been looking at in this session of the tutorial. You can even start printing one of your other documents.

However, a number of actions won't be possible. In particular, you can't edit another document and you can't do anything that directly affects the document you are currently editing. You can't, for example, copy it, move it, rename it or print it and you must not remove the disc holding this document from the drive and replace it by another. If you need to move documents off this disc onto another (for example, to make some more space on the disc) and you have a single-drive machine, you must move these initially to Drive M and only move them to your other disc once you have finished editing the document.

When you have finished using the Disc Manager, press [EXIT]. LocoScript then returns you to the document you were editing.

Session summary

In this session, you have seen how to do all the actions involved in keeping the documents on your discs organised and easy to find:

- How to get a new disc ready for use
- How to move a document from one disc or group to another
- How to generate a second copy of a document either on the same disc or on another disc
- How to get rid of unwanted documents
- How to get back a document you erased by accident
- How to give discs, groups and documents names that will help you remember what they are used to store
- How to make back-up copies of discs that contain valuable information
- How to use the Disc Manager without finishing work on the document you are editing

Session 8

Checking your spelling

For many people, a large part of preparing a document is that most tedious of jobs – checking it over for spelling mistakes and typing errors. Well, with LocoScript 2, you don't have to do this checking yourself – you can ask a special part of LocoScript 2 called LocoSpell to check it over for you. When LocoSpell finds a word that seems to be spelt strangely, it doesn't just bring this word to your attention – it even offers you a likely word to use instead.

You can use LocoSpell at any time while you are working on the document and you can get it to check:

- the whole document;
- part of the document; or
- just a single word.

In this session, we will show you how to set LocoSpell off checking over a document. You will also be introduced to the choices you have when LocoSpell comes across a possible error.

LocoSpell picks out errors by comparing each word with a list of about 80,000 spellings. This list is kept in a file called LOCOSPEL.DCT, which is stored in `group 7` on your Start-of-day disc and in the `SYSTEM` group on Drive M. LocoScript automatically copies this file to Drive M as part of the process of loading LocoScript 2. You have probably noticed the message `Copying A:LOCOSPEL.DCT` appearing on the first screen: well, this is what is behind that message.

The document we are going to check in this session is called MISTAKE.EG and it is stored in `group 1` (the EXAMPLES group) on your Start-of-day disc. Display the Disc Manager Screen (if you are not sure how to display this, turn to page 41). Then, if necessary, replace the disc in the drive by your Start-of-day disc and press [f7] to let LocoScript know you have done this.

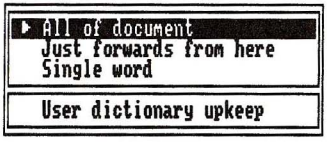
Asking LocoSpell to check your document

To check the spelling in a document you have to be editing the document. So the first step, when you are not already working on the document you want to check, is to open it for editing. Do this by picking out the document (MISTAKE.EG in this case) with the File cursor, pressing **E** and then [ENTER] – exactly as you did at the beginning of Session 4.

Once your document is on the screen, you can use LocoSpell to check its spelling. To start with, we will ask LocoSpell just to check the spelling in the last paragraph of this example document, ie. in just a part of the document.

Part of the document

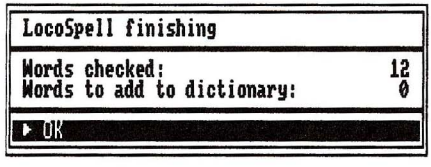
The part of the document LocoSpell checks is the section forwards from your current working position, so the first thing to ensure is that the Text cursor is at the beginning of the section you want to check. So move the Text cursor to the beginning of the last paragraph – ie. to the place we want LocoSpell to start its checking from – and then press [f7] to bring the Spell menu onto the screen.



The Spell menu is another of LocoScript's 'Commands' menus – which, you will remember, means that the arrow in the menu points to the action that is currently selected and you move the arrow to a different option simply by moving the Menu cursor.

To check just part of the document you want the option – `Just forwards from here`. (Remember, you can move the Menu cursor to this option either by pressing the Cursor keys or by typing the capital letters in the menu option.) Press [ENTER] and LocoSpell begins checking each word against the spellings in its standard list of spellings, starting with the word you put the Text cursor on.

In fact, all the words in the last paragraph of the example document are in the standard list of spellings, so LocoSpell simply works away checking each word. When all the words have been checked, it will put up the following message

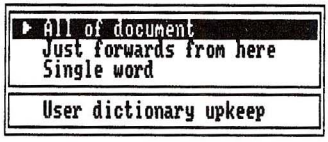


The number of words checked gives you an accurate count of the number of words in this last paragraph. (We will see what the number of words to add to the dictionary is all about shortly.) When you've read this message, press [ENTER] to clear it away.

There are, in fact, a number of spelling mistakes in the example document. To find these, you need to check the whole document.

The whole document

Don't worry about moving the Text cursor back up to the top of the document before starting LocoSpell off checking the whole of the document. Simply press [f7] to bring the Spell menu onto the screen.



The option you want this time is `All of document`. This is automatically selected for you, so just press [ENTER]. LocoSpell then starts to check the document, starting at the very first word.

- LocoSpell works forward through your document to the end. If you don't want it to check right to the end, then abandon the check when it has gone far enough:

– If there is a menu on the screen, abandon the check by pressing [CAN] once (or, in some cases, twice)

– If no menu is displayed, abandon the check by pressing [STOP], waiting for the system to pause and then pressing [STOP] again.

LocoSpell will then put up its message summarising the checking that has been done, to give you details of what has been done so far. When you've read this message, press [ENTER].

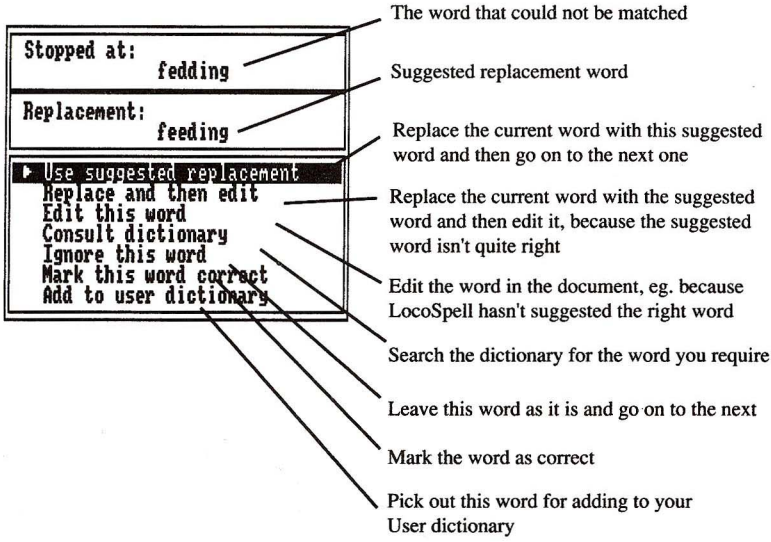
Note: It is possible to run out of space either on the disc you are working on or on Drive M while checking the spelling. If this happens, LocoScript will display a Disc full message, giving you a choice of running the Disc Manager or Cancelling the operation. We describe this Alert message fully in Session 19 where we describe how to handle 'Over-size' documents, but for now always proceed as follows, otherwise you will lose all the checking that has been done so far:

Look to see which Drive is affected and then select the option to Run disc manager. When you press [ENTER], LocoScript displays the Disc Manager screen. Erase some of the documents on the affected drive or move them to a different disc, using the methods we showed you in the previous session of this tutorial.

When you think you have freed enough space on the drive, press [EXIT]. If you didn't free enough space (or you accidentally freed space on the wrong drive), the error message will appear again – giving you another chance to sort out the problem.

Dealing with mistakes

The first spelling mistake in the example document is `fedding`. When LocoSpell tries to check this word, it can't match it against any of the spellings in its list. So it highlights the word that's causing the problem and then puts up a menu like this:



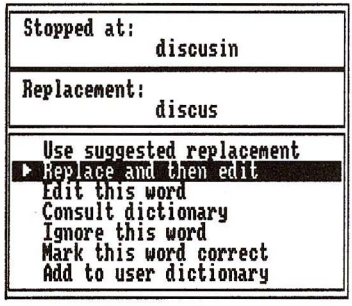
Normally the word LocoSpell suggests as the replacement has been taken from its lists of spellings, but if you've had the same 'wrong' word higher up the document, then what is displayed is the word you decided to replace it by last time. If you decided that the word was right last time, then you will see same word as the suggested replacement.

Using the suggested word

The word LocoSpell suggests as a replacement – `feeding` – is the word that should have been typed here. (LocoSpell will usually suggest a word that is at least very close to the one you want. However, it is not infallible and its suggestions can be quite unintentionally amusing at times.)

To slot the suggested word in, all you have to do is select `Use Suggested Replacement` and press [ENTER]. (This option is automatically selected for you – as you can see from the arrow.) LocoSpell replaces `fedding` with `feeding`, neatly putting the mistake right, and then carries on checking the rest of the document.

The next spelling mistake LocoSpell finds is `discusin`. In this case the replacement it offers isn't quite right. The word that fits here is `discussion`.



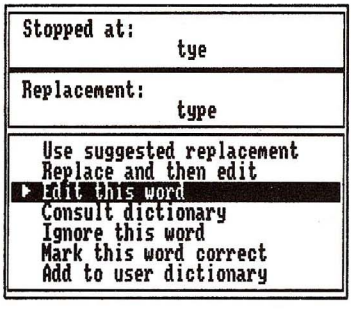
LocoSpell's suggestion is really very close. To make use of this, select `Replace and then edit` (as in other LocoScript menus, the arrow automatically moves to the option you pick out with the Menu cursor) and then press [ENTER]. Again, LocoSpell replaces your spelling mistake with its suggested word but this time it doesn't go straight on to checking the next word. Instead it leaves the word highlighted and waits for you to change it.

Press [←] and you will see a cursor rather like the Text cursor move from the end of the word back towards its beginning. When the cursor is back to the beginning, you can't move it any further, but you can move it to the right by pressing [→]. In this way, you can move the cursor to any letter in the word you want to change or insert something in front of. (**Note:** This cursor always starts at the end of the highlighted word.)

Change `discus` to `discussion` simply by typing the extra letter `sion` – exactly as you would normally – and press [ENTER]. LocoSpell then checks the word again before carrying on checking the rest of the document. Sometimes, LocoSpell will immediately stop again because the word you've produced isn't in its list of spellings. What LocoSpell is doing is giving you a fresh chance to correct the word. If you know the new spelling is correct, you can tell LocoSpell this – as we show you below.

Putting the mistake right directly

Sometimes you mis-spell a word in such a way that LocoSpell's suggestion is nowhere near the right word. In such cases, it's easiest to correct the word yourself. A case in point is the next mistake LocoSpell finds. The right word here is `the` but LocoSpell comes up with `type`.



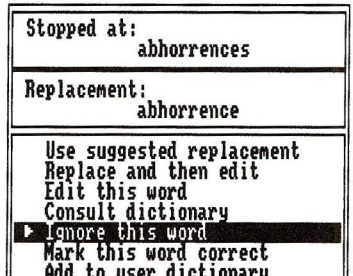
To correct it yourself, select `Edit word in context` (move the Menu cursor either by pressing [↓] or by typing E) and press [ENTER]. You can now work directly on the mis-spelt word. In this case, you want to change it to `the`. As before, you have a cursor at the end of the word which you can move to the place in the word you want to make the correction.

When you are ready, press [ENTER]. LocoSpell then checks the word again – just in case you have made a mistake in making the correction. When the word you now have on the screen is in the list of spellings, LocoSpell moves on to checking the rest of the document. But often, as in this case, LocoSpell will think the new word is mis-spelt as well. Then you need to tell LocoSpell that this spelling is correct – as we show you below.

Telling LocoSpell that the word is correct

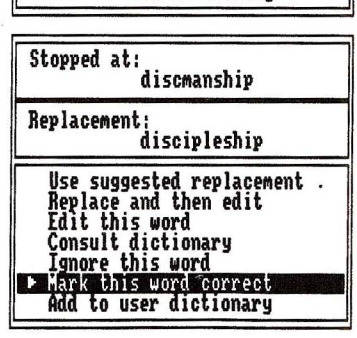
When you know that the 'error' that LocoSpell has picked out isn't an error at all – just a word that isn't in the lists of spellings – you have a number of options.

The simplest option is to tell LocoSpell to ignore this word and go on to checking the other words in the document. To do this, select `Ignore this word` (move the Menu cursor either by pressing [↓] or by typing I) and then press [ENTER]. Do this for the next 'error' LocoSpell finds.



LocoSpell then goes on to checking the next word.

The second option you have is to mark the word as correct. It then stays marked in this way – so any other time you check the spelling in this document, LocoSpell will know this word is right and not stop here.



The next 'error' LocoSpell finds is a suitable candidate for being marked correct. `Discmanship` is a bit of a bogus word but it has been included quite deliberately.

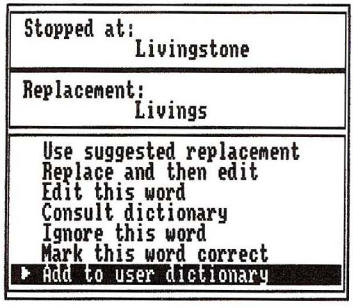
This time, the option to select is `Mark this word correct`. Press [ENTER]. `Discmanship` is now marked correct and LocoSpell moves on to checking the next word.

Adding a word to LocoSpell's lists of spellings

The other option you have when LocoSpell picks out a correctly spelt word as an error is to put the word in a special list of spellings called your User dictionary. When you have a User dictionary, LocoSpell looks in both its standard lists and in your User dictionary as it checks your document.

Use your User dictionary for special words that you will include in a number of the documents you prepare – like your own name, your address and company name. User dictionaries are also ideal for for technical terms that you use when you are writing about some specialised topic. When it's a word that you only use very occasionally, it's best simply to mark it as correct.

Suppose `Livingstone` – the next word LocoSpell picks out as an error – is a technical term that is very relevant to the subjects you write about. To tell LocoSpell that you would like this word in your User dictionary, select `Add to user dictionary` (either by pressing ↓ or by typing A) and then press ENTER



LocoSpell then puts this word on a special internal list of words to be added to your User dictionary when all the checking has been done. Meanwhile, LocoSpell now knows this word and won't pick it out as an error anywhere further down your document.

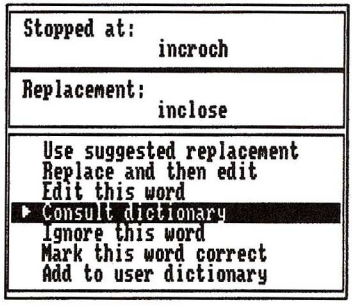
Note: The internal list of special words is of limited size, so you may fill it up before LocoSpell has finished checking your document. If this happens, you will see a message on the screen asking you either to add these words to the User dictionary or throw them away – rather like the message you get when all the checking has been completed (see below). Once this has been done, LocoSpell starts a fresh list which can be saved in the normal way at the end of the check.

Searching the dictionary for the right word

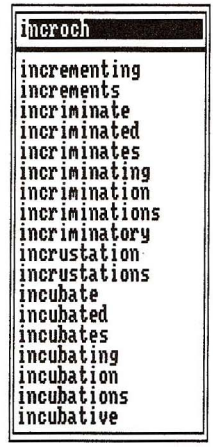
Sometimes LocoSpell's guess at the word you meant is wrong but you won't know how to correct the word yourself because you are not at all sure how it should be spelt. In this case, the thing to do is 'Consult the dictionary' – not your old faithful printed dictionary, but the list of spellings LocoSpell uses.

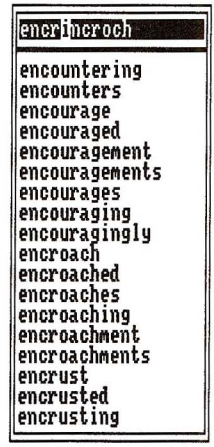
The next error LocoSpell finds is a case in point.

Obviously `incroch` is not the right spelling but `inclose` is nowhere near the right substitute. The word you actually want (`encroach`) is easily common enough to be in the list of spellings, so select `Consult dictionary` (move the Menu cursor either by pressing ↓ or by typing C) and then press ENTER



LocoSpell now displays a special Dictionary menu, with `incroch` at the top and below this the section of the dictionary into which `incroch` would fit. Obviously, the word we want isn't near here.





If your original spelling is evidently very wrong, type in the first two or three letters of another possible spelling for this word. In this case, type `encr`.

What you type is added to the front of the word at the top of the Dictionary menu. The part of the dictionary displayed then changes to the section in which your new 'word' would fit. (It may do this in a couple of stages, depending on how fast you type.)

Now you will either be able to see the word you want or you will generally feel that you've got quite close. Press [↓] to move the Menu cursor off the top line of the Dictionary menu and into the dictionary listing.

Move the Menu cursor to the word you want. If this is actually on the screen at the moment, you can move the cursor to the word directly. If it isn't displayed at present, keep pressing [↓] if you expect to find it further down the dictionary or [↑] if you think it will be further up. As you press the key, the list of words scroll so that you see the adjacent parts of the dictionary.

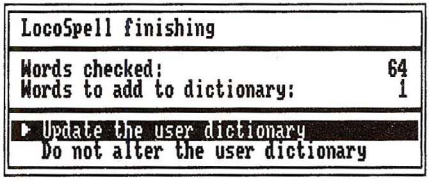
Note: If you were wrong about the part of the dictionary to search in, press either [←] or [→] to return to the top of menu and to return the small cursor to the start of this word. Then type the first two or three letters of your next guess at the spelling. Again, what you type is added to the front of the word at the top of the Dictionary menu and the section of dictionary displayed is the part you have now picked out.

When you've found the word you were looking for, press [ENTER]. LocoSpell then takes you back to the previous menu but this time with the word you picked out as the suggested replacement. Once again the arrow is pointing to `Use suggested replacement`, so to slot this word into your document, press [ENTER].

Note: If you don't find the word you want in the dictionary (or anything near it), press [CAN]. This takes you back to the previous menu but with the original suggested replacement. Then take one of the other options – for example, `Edit in context` or `Ignore this word` – as described above.

At the end of the check

When LocoSpell has checked the last word, it will put up a summary like this:



As before, the top part of this summary gives you a word count of the section that was checked. This word count incorporates all the changes you have made, so if you have split any words into two as you corrected the spelling, the word count will still be right. It also tells you how many words you picked out to go into your User dictionary. (If you don't pick out any words for your User dictionary, then you just see OK at the bottom of the menu. When you've read the summary, press [ENTER]: this returns you to working on the document.)

Adding to the User dictionary

Down the bottom of the summary are two options. The first of these, `Update the user dictionary` is automatically selected for you. (Again, you see the arrow beside it.) To put the words you picked out into your User dictionary, keep the Menu cursor on `Update the user dictionary` and press [ENTER]. If you decide, after all, to leave your User dictionary as it is, move the Menu cursor to `Do not alter the user dictionary` and then press [ENTER]. You then return to working on the document.

The dictionary you update is a file called USERSPEL.DCT in the SYSTEM group on Drive M. This is a copy of the file called USERSPEL.DCT in group 7 of your Start-of-day disc, which was copied to Drive M at the same time as the main dictionary, LOCOSPEL.DCT – ie. as part of the process of loading LocoScript. So to save the new version of your User Dictionary, you must copy the file on Drive M to your Start-of-day disc, replacing the existing file. (We showed you how to copy files in Session 7.)

• If you accidentally add a spelling mistake to your User dictionary, don't panic. Press [f7] to bring the Spell menu onto the screen, move the Menu cursor to `User dictionary upkeep` and press [ENTER]. A menu similar to that seen when you 'consult the dictionary' then appears, except that the top section is initially blank and the list of words is taken exclusively from the User dictionary. (If your User dictionary isn't on any of your drives, you will just see the words `empty dictionary`.)

To remove a word from the list, you put the Menu cursor on the word and press [-]. The Menu cursor starts at the top of the menu. Use the [↓] key to move it into the list of words and then use [↑] and [↓] to position the cursor on the spelling you want to remove. If you can't see this at the moment, keep pressing these keys to scroll the list of words.

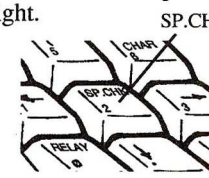
Don't forget to copy the updated User dictionary from Drive M to your Start-of-day disc.

Checking the spelling of a single word

Before you finish work on this document, we want to show you how to reach for LocoSpell's dictionary to find out how to spell the particular word you want to type now.

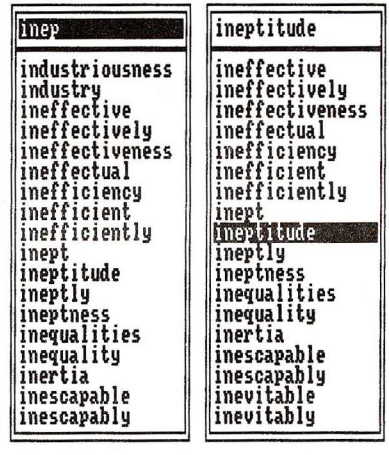
Suppose you wanted to add the sentence 'This would be the height of ineptitude.' at the end of the document – but you weren't sure how to spell 'ineptitude'.

The first step is to type as much of the problem word as you can. If nothing else, type the first couple of letters for the part of the dictionary you want to look up. In this case, type `inep` – as you can be reasonably certain that is right.



Without moving the Text cursor away from this word, press the key marked `SP.CHK` in the middle of the group of Cursor keys (or select the `Single word` option in the f7 Spell menu you have just been using to check larger amounts of the text). LocoSpell immediately highlights the word and looks it up in its list of spellings.

It then displays a Dictionary menu with the section of LocoSpell's dictionary your 'word' fits into – just as if you had 'Consulted the dictionary'. As `inep` isn't in the dictionary, the Menu cursor will be at the top of the menu. (If what you are checking is in the dictionary, the Menu cursor will be on the word itself in the main section of the menu.)



If you had managed to type the word correctly, you would just press [ENTER] and carry on editing the document. When you haven't got the word right, press [↓] to move the Menu cursor into the list of words and onto the word you actually want –

exactly as you did when you were 'consulting the dictionary'. If it turns out that you are looking the wrong part of the dictionary, press [←] or [→] and then type the first two of three letters of the next part of the dictionary you would like to try – then go searching around this part of the dictionary.

When you find the word you want – ie. `ineptitude`, position the Menu cursor on it and press [ENTER]. Your original word is then replaced by the word you've selected. (If you don't find the word you're looking for, press [CAN].)

You can now go on working on this document.

Note: If you press [SP.CHK] by accident, press [STOP], wait for LocoSpell to pause and then press [STOP] again – to abandon looking up the word in the dictionary. Otherwise, you will find yourself having to wait while LocoSpell checks its lists of spellings.

- Try changing some of the words in the example document; then using LocoSpell to check the spelling. Take whichever option seems appropriate. When you are ready, press [EXIT], select `Abandon Edit` and press [ENTER]. You can then come back and practise checking the spelling in this document any time you like.

Session summary

In this session, you have seen:

- How to check the spelling throughout the document you are working on or just in a part of this
- How to correct the mistakes LocoSpell finds
- How to tell LocoSpell that a word is right after all
- How to add to the list of spellings LocoSpell uses
- How to look up words in the dictionary – both while LocoSpell is checking the document and at the time you want to type them in the first place

In fact these are only some of the features of the LocoSpell spelling checker. You can also:

– prepare and use special dictionaries

– update your User dictionary to add new words to it

Details are given in the LocoScript 2 Reference Manual (available from Locomotive Software).

Of course, all LocoSpell does is check that the words you have used are real words. You still have to check that you used the right words!

Stage II: Refinements

Session 9

Indenting, centring and justifying

So far in this tutorial, we have seen how to put text into a document and how to change the text once it is there – and we have seen how LocoScript always ensures that your documents are perfectly laid out.

But changing the words in a document and tidying up the result, impressive though that is, is only one of the ways in which a word processor like LocoScript can process your text for you. In this session, we shall look at the way LocoScript can give your work an even more professional look through

- indenting lines and paragraphs
- positioning headings and other single lines centrally or over to the right
- justifying text – that is, giving it a straight righthand edge as well as a straight lefthand edge

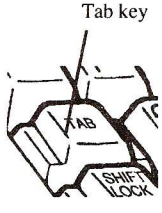
The document we are going to edit in this session is called `TABS.EG` and it is stored in `group 1` (the 'EXAMPLES' group) of your Start-of-day disc. So the first thing to do is to pick out this document with the File cursor and then open it for editing. (Turn to Session 5 if you are not sure how to do this.)

Indenting lines and paragraphs

There are three effects that you can produce through indenting – ie. through moving the lefthand edge of a line or paragraph away from the left margin of your page:

- paragraphs with the first line indented
- paragraphs in which all the lines are indented from the left margin
- 'labelled' paragraphs – for example, paragraphs numbered `1), 2), 3)`

Indenting the first line



This is the simplest possible way of indenting a paragraph.

The first step is to move the Text cursor to the beginning of the paragraph you want to indent. For example, move the Text cursor to the beginning of the first paragraph of our example document. Then press TAB.

Immediately, a → symbol appears at the start of the new line, inserted above the current line. Then when you press [REL], the paragraph is relaid with all the characters on the first line shifted to the right.

The special character you have inserted is called a Simple tab – and its effect is exactly the same as that of a tab on a typewriter. Like ↵, it is one of the special symbols that are never printed but you can choose to display on the screen through the Options menu ([f8] – see Session 5).

If you look at the Ruler line at the top of the screen, you will see that the beginning of the line is now immediately below the first → symbol on this line. This symbol marks the first tab position.

```
Advantages of a Word Processor↵
↵
→   There are lots of other jobs that you will want your word-
processor to help you with. If you are a Secretary of a club,
then you will want your word-processor to help you circulate
details of forthcoming events or copies of the club newsletter
to members. Or if you are preparing a report on something, then
```

Now press [TAB] again. Another Simple tab is inserted in the document and, this time when you relay the paragraph, the first line of the paragraph becomes indented to the second position marked by a → symbol – ie. to the second tab position.

No other line of the paragraph or of any other paragraph is affected – as you can see if you press [PAGE] (which, you will remember, forces LocoScript to relay down to the bottom of the page).

Indenting the whole paragraph

When you want to indent a whole paragraph, you again start by moving the Text cursor to the beginning of that paragraph and again you want to press [TAB] – but this time you need to hold down the [ALT] key as you press [TAB].

To see how this works, move the Text cursor to the beginning of the second paragraph, hold down the [ALT] key and press [TAB]. Immediately, another of the special characters – the ↦ symbol – appears at the start of the line. Now press [PAGE] to see what effect inserting this character has had.

Again, all the characters on the first line of this paragraph have shifted to the right and again, this is the only paragraph to be affected. But you will also see that the beginning of every line of this paragraph is now at the first tab position.

```
which you want to lay out and style really nicely. ↵
↵
↦   With LocoScript 2, there's essentially endless scope for
    revising and styling your text - so much so that you might
    get so carried away with producing the perfect document
    that you never actually get around to printing it! ↵
↵
Moreover, because you can save your work on disc any time you
```

The special character you have inserted is known as an 'Indent Tab' and whichever tab position it 'points' to is used as the lefthand margin for the rest of the paragraph. This means that you can pick out any of your current set of tab positions as the temporary lefthand margin. The last Tab you type to take the start of the paragraph to your chosen tab position must be an Indent tab but the rest can be either Indent tabs or Simple tabs.

To see this, move the Text cursor to the first letter of the first paragraph (ie. after the Simple tabs) and hold down [ALT] and press [TAB] again to insert an Indent tab. Press [RELAY]. Each line of the paragraph now begins at the third tab position.

'Labelled' paragraphs

This looks the most complex type of indenting but, in fact, it is no more complicated than indenting the whole paragraph. We shall demonstrate this using the fourth paragraph, which you see has already been numbered.

Move the Text cursor to the beginning of the text that follows the 'label' – ie. the `1)`. Insert an Indent tab by holding down [ALT] and pressing [TAB]. Now press [RELAY]: the rest of the paragraph is then indented to this tab position.

```
Moreover, because you can save your work on disc any time you
like:↵
↵
1) ⇢ You can start and stop work on a document at will; you
     don't have to finish somewhere that is easy to carry on
     from - like the bottom of a page - as on a typewriter.↵
↵
```

Once again, what you are doing is using the tab position the Indent tab points to as the lefthand margin for the rest of the paragraph.

• All these actions have used tab positions already set into our example document. You will see how to set and adjust tab positions in Session 12.

Positioning single lines

Lines are normally positioned so that they start at the left side of your page. This is only one of the places you might want to put a line; you might, for example, want to centre a heading or to right align the lines of the address at the top of a letter.

With LocoScript, you can:

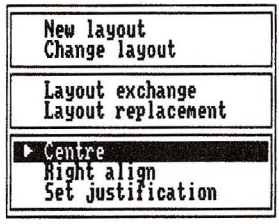
- centre the line between the margins
- right align the line, ie. put the righthand end of the line on the right margin (instead of the lefthand end on the left margin)
- combine all three on the same line, ie. a section over to the left, a section in the middle and a section over to the right

You position lines in these different ways by using a couple of the options in the Layout menu (or by using some special keystrokes that we will come to in the next session).

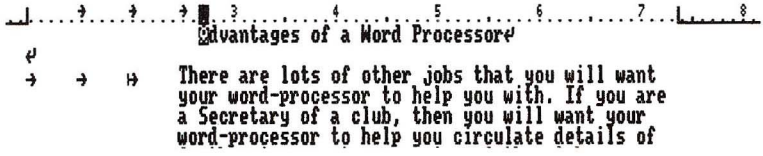
Centring a line

To centre a line, you move the Text cursor to the beginning of the line and then tell LocoScript to centre it.

For example, the very first line of the example document is a heading. To centre this heading between the margins, move the Text cursor to the start of the heading – ie. to the A of `Advantages of a Word Processor`. Now press [f2] to bring the Layout menu onto the screen.



To select `Centre`, move the Menu cursor to this option and press [ENTER]. Instantly, the whole line moves right until it is neatly positioned midway between the margins.



The `Centre` option is only for use on single lines. To see what happens when you use the `Centre` option at the beginning of a paragraph, move the Text cursor to the last paragraph and tell LocoScript to centre this. (Press [f2], select `Centre` and then [ENTER] as before). Now press [RELAY] to relay the paragraph. As you see, only the first line is centred.

Moving a line over to the right

Moving a line over to the right is very like centring it: you move the Text cursor to the beginning of the line and then tell LocoScript to 'right align' it.

At the end of the example document is a name. To show you how to move lines over to the right, we shall 'right align' this name.

To start, move the Text cursor to the beginning of the name `Fred Smith`. Now press [f2] to bring the Layout menu onto the screen again. This time the option you want is `Right align`. When you press [ENTER] this time, the name jumps to the righthand side of the screen. Notice how the `h` of `Smith` now touches the right margin.

The Right Align option, like the Centre option, is only for use on single lines.

Positioning different parts of the same line

As well as centring and right aligning whole lines, you can centre and right align sections of a line, giving you effects like:

```
Author                    Title                    Cost
```

All you have to do to achieve such results is move the Text cursor to the beginning of the section of the line you want in the middle of the page and tell LocoScript to `Centre` everything to the right of this position – exactly as you did before. Then you move the Text cursor to the beginning of the part of the line you want over to the right and tell LocoScript to `Right Align` the end section of the line – again, exactly as before.

You can similarly split lines into a section over to the left and a section over to the right – or a section over to the left and a centred section. What won't give sensible results is telling LocoScript to move a section of a line over to the right and then telling it to centre part of that section because this is meaningless.

Note: Once you have told LocoScript to centre or to align some text or, for that matter, to indent a paragraph, it remembers this – whatever changes you make to the line (correcting a spelling mistake, for example). This is by no means true of all the word-processors you might meet.

Justifying text

The final enhancement we look at in this session is 'Justification' - that is, giving your text both a straight righthand edge and a straight lefthand edge, by expanding all the spaces between the words. Justifying text instantly makes it look very professional – not least because it is impossible to do on a typewriter. The majority of the text in this user guide is justified.

Justified text

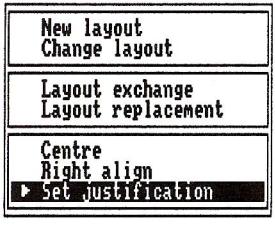
Justified text has both a straight righthand edge and a straight lefthand edge. It gets this by expanding all the spaces between the words. Justifying text instantly makes it look very professional – not least because it is impossible to do on a typewriter.

Unjustified text

Unjustified text is text with a ragged righthand edge. At the moment, all the text in the example document has a ragged righthand edge.

At the moment, all the text in the example document has a ragged righthand edge. In other words, it is unjustified. Suppose, for example, that this was exactly what you wanted for the first paragraph and the last – but between these you wanted the text to be justified. To arrange this, you again use the Layout menu – but this time you need the Justification option. You probably noticed an option called `Set justification` earlier when you were using the menu to centre and to right align lines.

Start by moving the Text cursor to the beginning of the text you want to justify – in this case, that means moving it to the beginning of the second paragraph. Then press [f2] to bring the Layout menu onto the screen.



Move the Menu cursor (and the arrow) to `Set justification` and press [ENTER] to tell LocoScript to do this. Now move the Text cursor down the document and you will see that it now justifies every line, giving you a nice straight edge. Stop when you get to the beginning of the last paragraph and press [f2]. This time the Layout menu appears with a difference – `Clear justification` instead of `Set justification`.

Move the Menu cursor to `Clear justification` and press [ENTER] to tell LocoScript to do this. Then press [PAGE] to force LocoScript to re-lay the text down to the bottom of the page. As you see, the last paragraph is unjustified.

• To finish this session, press [EXIT] and then select the `Abandon Edit` option – so that you can come back and work on this session again, as if for the first time. `Abandon Edit`, you will remember, throws away all the changes you have made.

Session summary

In this session, you have seen:

- How to indent the first line of a paragraph
- How to indent a whole paragraph
- How to produce 'labelled' paragraphs
- How to centre a line between the margins or move it over to the right of the page
- One way in which you can make your text justified

Stressing words and phrases

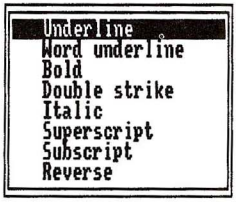
In this session, we see how to enhance text by picking out words and phrases and changing their appearance when they come to be printed – making them bold (thickened) or italic (slanted) or underlining them – or perhaps doing all three.

The document we are going to edit in this session is `PCWINFO1`, which is stored in `group 1` (the 'EXAMPLES' group) of your Start-of-day disc. So pick out this document with the File cursor and then open it for editing. (Turn back to Session 5 if you are not sure how to do this.)

Using the Style menu

The first thing we shall look at is how to change the appearance of words and phrases through using one of the LocoScript menus – the Style menu. To bring this menu onto the screen, press [f3]. (If you look at the Information lines at the top of the screen, you will see `f3=Style` to remind you that this is the key to press.)

Press [f3] now. The following menu appears on the screen:



As you see, this menu contains options like `Bold`, `Italic` and `Underline` – exactly the tools we want to emphasise individual words and phrases. It also contains a couple of options you are unlikely to be familiar with – `Double strike` and `Reverse`. `Double strike` tells LocoScript to tell the printer to type each character twice: the result is rather like telling LocoScript to make the characters bold, and indeed on some printers there is no difference. `Reverse` is a special way of making characters stand out on the screen by writing them as black characters on a bright background, rather than the usual bright characters on a black background. It doesn't affect how the characters are printed.

Press [CAN] when you have finished looking at this menu. (As you will remember, pressing [CAN] abandons any menu you bring onto the screen.)

We shall now use the Style menu to underline the heading.

To start, put the Text cursor immediately in front of the `T` of `The` – the first character we want to give the special style. (Remember that the true position of the Text cursor is marked by the lefthand edge of the cursor blob.) When the cursor is in position, and not before, press [f3].

As you can see from the menu, there are two possible types of underlining. The standard type underlines both words and the spaces between words; the other option –

`Word Underline` – just underlines words. For the heading, we want both words and spaces underlined, so the option we want is `Underline`.

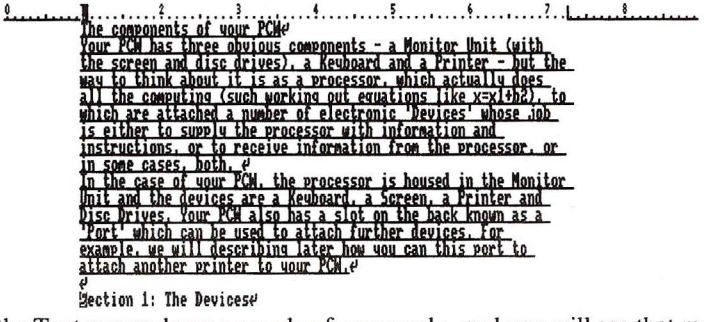
The Style menu is a 'Settings' menu like the Options menu we used in Session 5 to choose what extra information to display on the screen. The options that are set at the moment have ticks beside them and you set or clear options by pointing to them with the Menu cursor and then pressing [+] to set or [-] to clear or the Space bar to 'toggle' between 'set' and 'clear' – exactly as you did in Session 5.

So to set `Underline`, check the Menu cursor is on `Underline` and press [+]. (Move the Menu cursor to `Underline` either with the Cursor keys or by typing `U`.) LocoScript puts a tick beside `Underline`, just like the ticks you saw in Session 5 next to the options in the Options menu.

You could now go on and select another option – say, `Bold`. But beware: some of the options in this menu are mutually exclusive – ie. you can either have one or the other, not both. In particular, you cannot set both `Underline` and `Word Underline` at the same time – so setting `Word Underline` automatically clears `Underline` and setting `Underline` automatically clears `Word Underline`.

Underlining is all we want here, so just press [ENTER] to tell LocoScript to go ahead. The menu is cleared away and you are returned to the document.

You don't get instant underlining in the same way that LocoScript instantly centred or right aligned the line – because LocoScript waits until it relays the text before showing the change of character style. Step through the document word by word by pressing the [WORD] key and then you will see your text being underlined.



Move the Text cursor down a couple of paragraphs, and you will see that more of the document has been underlined than we originally intended. Indeed if you move the Text cursor to the end of the document (eg. by pressing [DOC]) the whole document will be underlined. Why should this be?

The answer is that we have told LocoScript where to 'turn on' underlining but we haven't told it where to turn it off. To put this right, move the Text cursor immediately after the last letter of the heading.

Now press [f3] again. The Style menu appears on the screen again – but note how it still has the tick next to `Underline`. This is to show you that `Underline` is currently 'turned on'.

To turn underlining off here, we simply clear the Underline option. Point to `Underline` with the Menu cursor as before but, this time, press [-] or the Space Bar. LocoScript takes away the tick beside `Underline` to show that underlining has been turned off.

Press [ENTER] to tell LocoScript that everything is now set as you want and to return to working on the document.

To see what effect this has had, press [PAGE] – to force LocoScript to relay down to the bottom of the page. Now only the first line is underlined – as we wanted.

To see something else about the workings of the Style menu, move the Text cursor back up to the heading you have underlined – anywhere on the line will do – and bring the Style menu onto the screen again. Notice how `Underline` is shown as being turned on – because the menu shows you the character style at the Text cursor. (Similarly, the Size menu – introduced in the next session – will always show you the size of characters at the Text cursor.)

What goes into the document

What we have actually done by using the Style menu is to put some special codes into your document – one where we wanted underlining to be turned on and another different one where we wanted underlining to be turned off again.

These special codes (and others like them) are called word-processing codes and they are really the key to LocoScript's power. Each code tells LocoScript that the following text should be styled or laid out in a particular way, and as you choose which codes to put in, they give you a lot of control over how your finished document looks.

Word-processing codes don't normally appear on the screen and they are never printed. They just affect the way the text of your document appears – both on the screen and when it is printed. However, you can display the codes on the screen through one of the options in the Options menu, the same menu we used in Session 5 to display spaces and blanks on the screen.

Press [f8] to bring the Options menu onto the screen. The option you need to display the word-processing codes is `Codes`. Set this option by pointing to it with the Menu cursor and pressing [+]. When you press [ENTER], the screen changes to:

```
.....|.........2.........3.........4.........5.........6.........7..|.......
     (+UL)The components of your PCW(-UL)↵
     Your PCW has three obvious components - a Monitor Unit (with
     the screen and disc drives), a Keyboard and a Printer - but the
     way to think about it is as a processor, which actually does
     all the computing (such working out equations like x=x1+b2), to
```

The codes we added with the Style menu are now visible as (+UL) and (-UL) – the (+UL) appearing where we turned on underlining, the (-UL) appearing where we turned underlining off. Also notice how displaying these codes has apparently pushed the text towards the righthand margin. However, this is just an effect you see on the screen: the codes don't push the text towards the right margin when you come to print the document.

Note: (+UL) and (-UL) are just ways of representing the codes on the screen. You can't put these codes in simply by typing the characters (+UL) or (-UL) – though there is a way of putting them in by just pressing keys, as we shall see shortly. These codes are just one character to LocoScript: in particular, it only takes one stroke of a Delete key to remove the whole code from your document – whether they are displayed on the screen or not.

- Before you go on, use the Style menu to turn on and turn off the other effects – Bold, Double, Italic and Reverse:
  - Move the Text cursor to the start of the word or phrase you want to affect.
  - Press [f3].
  - Move the Menu cursor to an option you want to set (turn on) or clear (turn off).
  - Press [+] to set the option; press [-] to clear it; press the Space Bar to toggle the setting of an option, ie. set one that's clear or clear one that's set.
  - When all the options are set or cleared as you want, press [ENTER]

Note: Bold, Double and Italic cannot be shown on the screen: they are purely print effects. Reverse, on the other hand, is purely a screen effect and does not affect the text when it is printed.

Look at the codes LocoScript puts in each time you press [ENTER]. Notice how there is a separate (+...) code for each option you turned on (ie. changed from cleared to set) in the menu and a (-...) code for each option you turned off (changed from set to cleared).

Now clear the Codes setting in the [f8] Options menu. (Turn back to Session 5 if you are not sure how to do this.) All the word processing codes you have put in are now hidden. Notice how you can still see where underlining and reverse are turned on, but you can't see just by looking at the text what you have marked as bold, double or italic. However, there is a simple way of telling what styles are set at the Text cursor: just look at the Information lines at the top of the screen. If Bold, Double and/or Italic are set at the Text cursor, this is displayed.

It is usually a good idea to work with the Codes displayed when you put word-processing codes into your documents. Then you can see very readily which parts of your document have been given special styles.

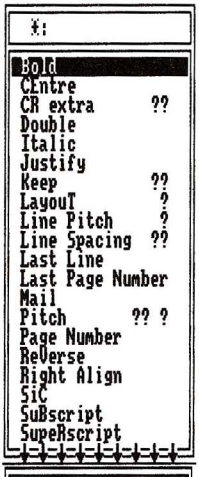
Note: The styles that your text can have when it is printed don't just depend on the codes you put into your document but also on the printer you use. In particular, you can't print italic characters on the built-in printer (or on any other daisy-wheel printer) if there are no italic characters on the print wheel you are using.

Using the Set and Clear menus

An alternative way of putting in these word-processing codes is to use a couple of special menus – the Set menu and the Clear menu. You use the Clear menu to put in any code that starts with a –, such as `(-UL)` or `(-Bold)`. You use the Set menu to put in codes that starts with a +, such as `(+UL)`, and others that don't have either a + or a –.

To show how these menus are used, we shall now underline `Section 1: The Devides` – ie. put `(+UL)` at the start of this heading and `(-UL)` at the end.

Move the Text cursor to the `S` of `Section`. Press the [⊞] (or 'Set') key and then wait. In a little while, the Set menu appears on the screen.





This menu is too long to display on the screen: hence the arrows at the bottom of the menu. To see the remaining options, press [↓]. The menu entries will then scroll to show you the other options until all the options have been displayed. To see the options at the top of the menu again, move the Menu cursor up to the top of the menu and then keep pressing [↑]. Try this out.

To select `UnderLine`, either move the Menu cursor to this option or type `UL` – ie. the letters written in capitals in the option you want. As you type, the Set menu shrinks down – initially just to the options starting with a `U`, then to just `UnderLine` when you type the `L`. When the Menu cursor is on `UnderLine`, press [ENTER]: the menu is cleared away and the `(+UL)` code is inserted in your document.

Now move the Text cursor to immediately after `s` of `Devices`. This time, press the [⊟] (or 'Clear') key and then wait. This time the Clear menu appears on the screen.

This menu works exactly like the Set menu. So to select the `UnderLine` option, type `UL` (as before, the menu shrinks as you do this); then press [ENTER]. The menu is cleared away and a `(-UL)` code is inserted in the document. The words between the two codes are now underlined.

• Try using these menus to put in other word processing codes. For the moment, just use the `Bold`, `CEntre`, `Double`, `Italic`, `Justify`, `ReVerse`, `Right Align`, `UnderLine` and `Word underline` options. Notice, in particular, how the codes for centring and right aligning are `(CEntre)` and `(RAlign)`. You don't have codes like `(+CEntre)` and `(-CEntre)` or `(+RAlign)` and `(-RAlign)`, because these instructions only apply to one line and so don't need to be turned off.

Using keystrokes

The final way you can put in word processing codes is by typing special sequences of keystrokes: no menus are involved. The keystrokes have to be learnt, but once you know what these are, this becomes easily the quickest way of putting in the codes.

The keystrokes are essentially the same ones as you use when you put in the same codes using either the Set or the Clear menu as appropriate – because, in fact, the Set and Clear menus are just representations of the keystrokes that are used to enter the codes. The main difference is that you just type the keystrokes – you don't wait for the menu to appear. Also, because no menu appears on the screen, you don't have to press [ENTER] to finish the keystroking.

So if you want to insert a `(+...)` code through a sequence of keystrokes, you press [+] and then you type the same letters as you would type to move the Menu cursor directly to the option you want in the Set menu – ie. the letters written in capitals in the menu.

To see how this works, move the Text cursor to the start of the current line, press [+] and then type RA reasonably quickly. This puts in a `(RAlign)` code and right aligns the line (ie. moves the line over to the right). The `Right Align` option in the Set menu has a capital R and a capital A. (You will see LocoScript extend the Text cursor into a 'patch' while it waits for you to complete the code.)

Similarly, press [+] and type B to put in a `(+Bold)` code; or press [-] and type I to put in a `(-Italic)` code. Now, turn back to the previous page where the Set and Clear menus are displayed and try using this technique to put in other codes. If you get confused, wait a moment.

The relevant part of the Set or Clear menu will then appear and you should be able to see from this what you need to type to get the right result. However, then you will have to press [ENTER] to clear the menu away again.

Note: If you accidentally type the wrong letter while keystroking a code, what to do depends on what happens:

- If your PCW bleeps, just type the letter you meant to type.
- If the wrong code is inserted, press [←DEL] and start again.
- If neither of these happen, press [←DEL] and type the letter you meant to type.

Superscripts and subscripts

We finish this session by looking at a couple of the options in the Style menu that we ignored earlier – Superscripts and Subscripts. These are characters written above and below the normal line of the text, either as footnote markers (1) etc. or in mathematical or chemical formulae like H_2O.

In the middle of the second paragraph, there is a fragment of mathematics, currently written as x=x1+b2. This should be $x=x_1+b^2$ – ie. we should have the 1 as a subscript, written below the general line of the text, and the 2 as a superscript, written above the general line of the text.

To put this right, you need:

- a (+SuB) code before the 1 to make this a subscript
- a (-SuB) code before the + so that the + is on the line
- a (+SupeR) code before the 2 to make this a superscript; and
- a (-SupeR) code after the 2 so that the rest of the text is on the line.

You can put these codes in either:

- by using the Style menu
- or by using the Set menu for the (+...) codes and the Clear menu for the (-...) codes
- or by using keystrokes.

For practice, we shall put in these codes by using keystrokes. But first, check that you are displaying word-processing codes – so that you can 'see' what you are doing.

Move the Text cursor to the 1. The code to put in here is (+SuB); so press [⊞] and then type SB (either in capitals or in small letters: it doesn't matter). If you look at the screen as you type, you will see LocoScript spread the Text cursor into a patch as you type and then snap in (+SuB).

Now move the Text cursor just after the 1. The code you need here is (-SuB); so this time press [⊟] and then type SB. (Again, you will see the patch on the screen until LocoScript recognises which code you want.)

The codes around the 2 are put in similarly. The (+SupeR) code is inserted by pressing [⊞] and typing SR; the (-SupeR) code is inserted by pressing [⊟] and then typing SR.

When you have finished, you should have:

x(+SuB)1(-SuB)+b(+SupeR)2(-SupeR)

This has, in fact, made the equation $x=x_1+b^2$ – but the only confirmation you get of this on the screen are the codes you have put in. The true effect cannot be shown on the screen but you will see it when you print the document out.

Finally...

Finish work on this document in the usual way by pressing [EXIT]. This time, we recommend that you select the `Save and Print` option so that you can see the effect of the word-processing codes you have inserted.

Session summary

In this session, we have seen:

- How to change the appearance of words or phrases by using the Style menu
- How to put Superscripts and Subscripts in your documents
- How to display the word-processing codes you insert
- How to put in word-processing codes using the Set and Clear menus
- How to put in word-processing codes using keystrokes

Session 11

Using character pitches and line spacings

So far we have been working exclusively with the Pica style of characters (10 characters per inch), 6 lines per inch down the page and a line spacing of 1 (ie. printing on every line). In this session, we are going to show you how you can use different character pitches (ie. different numbers of characters per inch) and different line spacings for individual words and phrases.

Changing the character pitch on a daisy-wheel printer like the built-in printer gives you characters that are spaced more closely or more widely as appropriate. Changing the character pitch on a dot-matrix printer changes the size of characters themselves.

The document we are going to edit in this session is called `WHEEL.TXT` and it is stored in `group 1` (the 'EXAMPLES' group) of your Start-of-day disc. So the first thing to do is to pick out this document with the File cursor and then open it for editing. (Turn to Session 5 if you are not sure how to do this.)

Before we start, a word of warning. These are very powerful features of LocoScript, but not ones to be used overmuch. Constantly changing the character pitch and line spacing of your text will give you a poor-looking result.

Note: Not all the different character pitches can be reproduced on every printer – in particular, not every printer can print at a pitch of 15 characters per inch, Whenever you ask for a character pitch that can't be reproduced on your particular printer, LocoScript will use the closest approximation it can. However, it is always best to set just the character pitches that suit your printer.

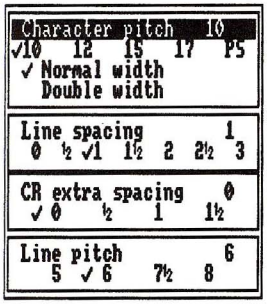
Making local changes

The word-processing instructions we will look at in this session are the ones that:

- change the character pitch for a particular word or phrase so that it stands out
- change the line spacing for individual lines to achieve special results, for example, in tables – or to prepare mathematical equations with simultaneous superscripts and subscripts (see below).

The common factor: Using the Size menu

The common factor in making local changes of character pitch or line spacing is the Size menu. If you look at the Information lines at the top of the screen, you will see that this is brought onto the screen by pressing [f4]. Press [f4] ([SHIFT]+[f3]) now. The following menu appears on the screen:



This menu is divided into four parts – each one dealing with a different aspect of character size and line spacing.

Character Pitch describes the size of the characters in terms of the number of characters that can be fitted into each inch across the page. Thus `Character Pitch 10` tells you that there will be 10 characters per inch across the page; `Character Pitch 12` means 12 characters per inch.

`Pitch 10 is ten characters per inch` ***Pitch 10***

`Pitch 12 gives twelve characters per inch` ***Pitch 12***

`Normal width` and `Double width` add an extra dimension to character size by giving you the choice of the standard number of characters per inch (Normal width) or half that number of 'Double width' characters. On a daisy-wheel printer, 'Double width' characters are double-spaced; on a dot-matrix printer, the characters are literally twice as wide.

You thus always have two parts of the character size to select: the basic pitch and whether you want Normal or Double-width characters.

`Normal width 10 pitch characters` ***Normal width***

`D o u b l e  w i d t h  c h a r s` ***Double width***

Line Spacing gives the number of standard lines the printer advances between printing one line and the next. Thus a Line Spacing of 1 gives you a 'single-spaced' document with text printed on every line, while a Line Spacing of 2 gives you a 'double-spaced' document with text printed on every other line.

Line Spacing 1

A Line Spacing of 1 gives you text on every line. This is the Line Spacing to use for finished documents.

Line Spacing 2

Use Line Spacing 2 for draft copies – to give you room to mark changes.

CR Extra Spacing gives the number of standard lines the printer advances in addition to the Line Spacing after printing a line that ends in a Carriage Return (say, the last line of a paragraph) and the next line. For example, a CR Extra Spacing of a ½ automatically gives you an extra half-line space between paragraphs:

CR Extra Spacing 0

This is text with a Line Spacing of 1 and a CR Extra Spacing of 0.
As you see, the paragraphs follow on without any extra break.

CR Extra Spacing 1/2

This is text with a Line Spacing of 1 and a CR Extra Spacing of 1/2.

This time you do see a break between the paragraphs.

Line Pitch gives the standard number of lines per inch down the page, in the same way that the Character Pitch gives the number of characters per inch across the page. A Line Pitch of 6 therefore gives you six lines per inch, ie. lines ⅙th of an inch apart.

The current settings are given on the top line of each part of the menu. Written underneath are all the possible setting options. The Size menu is another of LocoScript's 'Settings' menus (like the Options menu and the Style menu), so to set any of these sizes and spacings, you point to the option you want with the Menu cursor and press the [⊞] key. The previous setting is automatically cleared.

To show this in action, we shall now go through the steps involved in changing the character size and the line spacing at various points in our example document. As with other menus, it is important to position the Text cursor before bringing the Size menu onto the screen; so before you go any further, clear the menu off the screen by pressing [CAN].

Changing the character pitch

Suppose, for effect, you wanted to make `'Prestige'` in the first paragraph stand out by putting this in 12 Pitch 'Double-width' (ie. double-spaced) characters.

Move the Text cursor to the beginning of `'Prestige'` (ie. to the point in the document where you want to change over to using 12 Pitch double-spaced characters) and press [f4] to bring the Size menu onto the screen.

The first line of the menu tells you that the current character pitch is 10 characters per inch. The possible settings are listed underneath. The options `10`, `12`, `15` and `17` are very straightforward, being simply the number of characters per inch. These are the 'Fixed' character pitches. `PS` needs some more explanation.

PS stands for Proportional Spacing. Using PS gives a very professional look to your documents because the space occupied by each character isn't fixed, as it is for the other character pitches, but depends on the width of the character itself. Thus, narrow characters such as i and l occupy very much less space than wide characters such as M and W. (**Note:** If you want to produce proportionally spaced text on a daisy-wheel printer, you really need a PS printwheel to give you the best results. However, a PS printwheel may not be readily available for your printer)

The overall result is about 12 characters per inch.

At the moment, there are ticks beside `10` and `Normal width` to show that these are the current settings. What we want is 12 Pitch Double width, so the first job is to set `12` Pitch instead of `10` Pitch; then we will set `Double width` instead of `Normal width`.

Move the Menu cursor onto the line of possible settings. When you do this, it initially goes to its current settinsg (`10` in this instance). Use the Cursor keys ([←] and [→]) to move it to `12` and press [+] to select this option. (You could have pressed the Space bar here instead of [+]. As you will remember, pressing the Space Bar will can also be used to set an option that is currently clear – see Session 5.)

To set `Double width` instead of `Normal width`, you have a choice of setting `Double` (say, with the [+] key) or clearing `Normal` (either with the [-] key or by pressing the Space Bar) – because you can only have either Normal width or Double width. (Remember how this was also true when you were choosing between High Quality and Draft Quality for printing in Session 4?) So, say, move the Menu cursor to `Double Width` and press [+]

As with any 'Settings' menu, you could now go on and set other parts of this menu but for the moment, just press [ENTER] to tell LocoScript to go ahead. If you now show word-processing codes (by using the Options menu: see Session 10), you will see that you have inserted a `(+Pitch12D)` code in the document.

The `(+Pitch12D)` code 'turns on' using this size of character and, just as you needed a second code to 'turn off' bold after a `(+Bold)` code (Session 10), you now need another code at the end of `'Prestige'` so that you go back to using 10 Pitch Normal-width characters there.

Again you can put in this code through the Size menu. Move the Text cursor to the end of `'Prestige'` (as always, remember that the true position of the Text cursor is marked by the lefthand edge of the cursor oblong) and press [f4] to bring the Size menu onto the screen. This time, the current setting is `12D` – ie. 12 and Double width are ticked. Use the same steps as before to set first the Pitch you want and then Normal or Double width, this time selecting `10` Pitch and `Normal width`.

Again, the code you have inserted is one that tells LocoScript to 'turn on' using a particular size of characters (10 Pitch). It doesn't tell LocoScript to 'turn off' the pitch you last set.

Note: You may well have expected `'Prestige'` to look different on the screen now it is a different character pitch. It doesn't for the simple reason that characters on the screen are always spaced in the same way. However, the fact that you changed the character pitch will change the number of characters that can be fitted on the line and this may well mean a change in where LocoScript decides to break the line. This can be particularly obvious when you use smaller characters because the lines may now appear to break into the righthand margin.

Changing the spacing

When you want to make a local change to the distance between one line and the next, there are three aspects to the line spacing to consider:

- the **Line Pitch** – the standard number of lines per inch down the page
- the **Line Spacing** – the number of standard lines the printer advances between printing one line and printing the next
- and, if the lines you want to affect are ended by ↵s, the **CR Extra Spacing** – that is, the number of standard lines moved in addition to the Line Spacing at the ends of paragraphs.

What you have to work out is the combination of these three that will give you the result you require.

Selecting the Line Pitch

Start by considering the Line Pitch. There are four choices of Line Pitch but in general, you only use two of these – 6 lines per inch and 8 lines per inch. Five lines per inch and 7½ lines per inch are only included to support continental and other special printers. Six lines per inch is the standard setting for most printers. So we advise you to keep to a Line Pitch of 6, unless you really need 8 lines per inch.

Selecting the Line Spacing

Setting the Line Spacing in a LocoScript document is like setting the Line Spacing lever on a typewriter. It sets the number of lines of the Line Pitch that the printer moves between printing one line of a paragraph, say, and printing the next line.

LocoScript offers a range of possible Line Spacings – 0, ½, 1, 1½, 2, 2½ and 3. There is nothing to stop you choosing any of these, but as on a typewriter, the usual choice is between single-spacing (a Line Spacing of 1) and Double-spacing (a Line Spacing of 2) – and your choice will depend on the type of document you are working on. If you are working on a letter, for example, you will probably want this to be single-spaced: but if you are working on the draft of an article, you will probably want it double-spaced so that you have plenty of room for corrections.

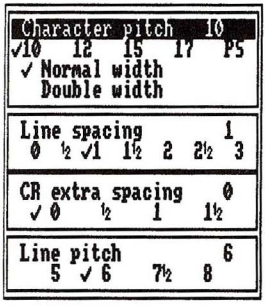
Selecting the CR Extra Spacing

LocoScript gives you the option of setting a CR Extra Spacing to let you have a more subtle spacing between paragraphs than just a single blank line. By setting the CR Extra Spacing to ½, for example, you can give yourself ½ line spaces between your paragraphs – an altogether more 'classy' effect.

An example

Suppose, for example, that you want to double-space the paragraphs at the top of the example document and put half-line spaces between the lines in the table of accents and keystrokes.

The first step, as always, is to move the Text cursor to the place you want the different style to start from. In the case of a different line spacing, this place is anywhere on the first line that you want to have the new line spacing.



When the Text cursor is in position (on the first line of the first paragraph), bring the Size menu onto the screen as before by pressing [f4].

Looking at the menu, you can see that the Line Pitch is 6, the Line Spacing is currently 1 and the CR Extra Spacing is 0. To set the Line Spacing to 2, move the Menu cursor down to the list of possible Line Spacings and then across to 2. Press [⊞] to set a Line Spacing of 2 and then tell LocoScript to go ahead by pressing [ENTER] in the usual way. If you are displaying codes you will see LocoScript put in a `(+LSpace2)` code which tells it to 'turn on' a Line Spacing of 2.

Now move down to the line above the table. This is the line after which you want LocoScript to return to the 'old' line spacing and to set a CR Extra Spacing of ½. As you move to this line, you might well expect the lines to space out on the screen as LocoScript relays your document. This doesn't happen because all the screen shows is your lines of text, each on a separate line of the screen. However, the position of the End-of-page line(s) and the Line number for the Text cursor recorded on the second Information line will have changed.

When the Text cursor is in position, press [f4] to display the Size menu and then move the Menu cursor to the Line Spacing options and set a Line Spacing of 1. Then move it down to the CR Extra Spacing options and set a CR Extra Spacing of ½. Each time, position the Menu cursor on the option you want and then press [⊞]

Tell LocoScript to go ahead with this new Line Spacing and CR Extra Spacing by pressing [ENTER]. If you are displaying codes, you will see that this puts `(+LSpace1)` `(+CR½)` into your document – which tells LocoScript to 'turn on' a Line Spacing of 1 and a CR Extra Spacing of ½.

Using keystrokes

Just as you don't have to use the Style menu to put in the codes to pick out particular words in italic or bold, you don't have to use the Size menu to put in the word processing codes needed to change character size, line spacing and line pitch. You can put in these codes by pressing the appropriate sequence of keys – or by calling up the associated Set and Clear menus (see Session 10).

To illustrate this, we shall show you how to type a fairly typical mathematical formula in a LocoScript document:

$y^2=x_a^2+x_b^2$

We shall concentrate here on the keystroking that you would use to type this equation in 12 Pitch characters. Initially, the keystrokes to use may not be that easy to recall – but all you really need to know is whether the code you want starts with a + or a – or neither. As you will remember from the last session, if it starts with a –, the first key to press is [-]; if it starts with a + or neither, the first key to press is [+]. If you don't know how to continue after that, all you have to do is wait for the appropriate Set or Clear menu to appear on the screen.

The problem with typing an equation like the one above is that, as a rule, you can't have a superscript and a subscript at the same point on a line. But with LocoScript, that's no problem. All you do is type the xs, ys and superscripts on one line; type the subscripts on the next line; and adjust the line spacing between them so that the second line is printed on top of the first. The only restriction is that you have got to be using one of the 'Fixed' character pitches: this operation doesn't work if you are using Proportionally-spaced characters.

Suppose you wanted to insert this equation at the end of the example document. Once the Text cursor is at the place you want to put the equation, you start by typing:

[+]P12[ENTER]

to put in the code that 'turns on' 12 Pitch characters. Note that the last step in putting in this code is to press [ENTER] – when to put in a code like (+Bold), you just type [+]B. The difference is that the code we are putting in here incorporates a number. *Whenever there's a number in the code, the last part of the keystroking is to press* [ENTER]

The next thing to type is the xs, ys and superscripts, ie.:

y[+]SR2[-]SR=x[+]SR2[-]SR+x[+]SR2[-]SR

Set superscript — Clear superscript

Finally on this line, you want the codes that tell the printer not to advance between printing this line and the one on which you type the subscripts. These are:

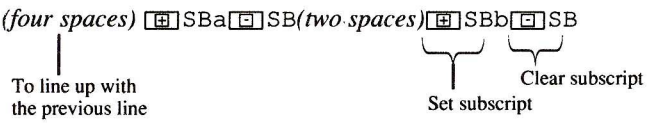
(+LSpace0) – which sets a Line Spacing of 0; and

(+CR0) – which sets a CR Extra Spacing of 0

so the keystrokes you need are:

[+]LS0[ENTER] [+]CR0[ENTER]

Again, as both codes involve numbers, you have to finish each code by pressing [ENTER]. Start the next line by pressing [RETURN] and then type 'the subscripts':



Before you finish this line, you need the codes that tell LocoScript to go back to using the 'old' Line Spacing, CR Extra Spacing and Character Pitch. You could do this through codes like `(+LSpace1)` which tells LocoScript to 'turn on' a Line Spacing of 1. However, although the only codes you can insert through the Size menu are `(+...)` codes, you can use keystroking to insert codes that tell LocoScript to 'turn off' the special settings you are using. LocoScript then resets the size or spacing to its initial value. (We will explain what these initial values are in the next session.)

The codes you can use here are:

`(-Pitch)` – which returns the character pitch to its initial value of 10
`(-LSpace)` – which returns the Line Spacing to its initial value of 1; and
`(-CR)` – which returns the CR Extra Spacing to its initial value of 0

and the keystrokes to put these codes in are:

[-]P [-]LS [-]CR

(No numbers this time, so no need to press [ENTER])

Session summary

In this session, you have seen:

- How to write individual words and phrases in different character sizes
- How to type superscripts and subscripts
- How to make temporary changes to the line spacing and how this can be used to good effect
- What effect these changes have on the document you see on the screen
- How all these changes are put to good use in typing mathematical formulae
- What using different character sizes means when it comes to printing the document

The steps we have used in this session have only changed the size of characters and the line spacing for individual words and phrases. At times, you will want to change the character size used for whole sections of a document – even for a whole document. The techniques involved in doing that are closely linked with the techniques used for setting margins and tabs covered in the next session of this tutorial.

Session 12

Margins, tabs and tables

So far in this tutorial, you have worked with margins and tab positions that have been set up for you. For much of what you do, the margins LocoScript automatically gives you when you create a document will be fine: they are, after all, a very sensible 1" from either edge of a sheet of A4.

What LocoScript doesn't automatically give you is any tabs. The only tabs you have used so far have been in the Example documents. One way you could get some tab settings in a new document would be to copy one of the Example documents and delete all the text. However, making do in this way isn't necessary. In this session, we show you how easy it is to set the margins and tab positions yourself, whether this be for the whole document, special paragraphs or really quite complicated tables.

The margins and tabs for a document can be set up – and changed – at any time while you are editing the document. The document we are going to edit to show how this is done is stored in the document called INQUIRE.EG in `group 1` (the 'EXAMPLES' group) of your Start-of-day disc. So the first step is to pick out this document with the File cursor and open it for editing. (Turn back to Session 5 if you are not sure how to do this.)

Note for users of LocoScript on the PCW8256/8512: LocoScript 2 Layouts work in a very different way from the Layouts you are used to. Try as far as possible to forget everything you have learnt about using Layouts in the past as you study this session.

The key concept – Layouts

Associated with every part of a document is a 'Layout' which tells LocoScript how the text should be laid out. In particular, it defines:

- the position of the left and right margins
- the position and the type of any tabs
- whether paragraphs are justified (spaced out so that both the left and the right edges of the paragraph are straight) or unjustified (with a ragged right edge)

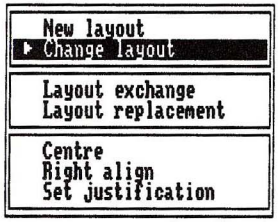
The Layout also specifies whether the text should all be italic and defines a character pitch, line pitch, line spacing and CR extra spacing. These are the **initial** values for the character size, etc. As we saw in the last session, you can change to a different character size or whatever, whenever you like. The codes we put in then to 'turn off' the special setting – for example, a `(-Pitch)` or a `(-LSpace)` code – tell LocoScript to go back to using the value set in the Layout. (Some other details are also defined in a Layout but these are a little esoteric and so need not concern us here.)

All the documents you have created so far have used a Layout that LocoScript gave you – typically, 10 Pitch characters, single-spaced, unjustified text and an inch-wide margin either side on A4 paper.

The first thing we are going to see is how to give your document overall the margins, tabs etc. that you want.

Changing the Layout

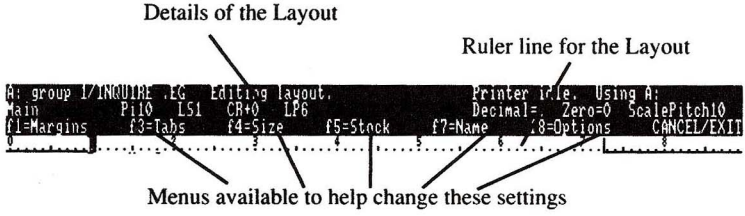
The menu that helps you change the Layout you are using is the Layout menu. This is the same menu that we used in Session 9, for example, to centre lines. So the first step is to press [f2] to bring this menu onto the screen.



The option you want here is `Change Layout`. The menu is a Commands menu, so move the Menu cursor to select the `Change Layout` option: then press [ENTER] to tell LocoScript to go ahead.

The screen now changes – giving you a new set of Information lines, because you are now working with LocoScript's Layout Editor. In particular, you now have new menus to work with – to help you set up the Layout you want. The Ruler line will also feature in setting up your Layout: we will be seeing how you can use the Cursor keys to point to positions on this Ruler line.

(The rest of the screen still shows your document – but you can't change any of the text while you are using the Layout Editor.)



The second Information line gives you very much the same information about the Layout as you see on the second Information line while you are editing the document – the character size (Pitch), the Line Spacing, the Line Pitch, etc. However, the group of details towards the end of the line are new:

- `Decimal` records whether a full stop or a comma is used as a decimal point (the significance of this will become clear later in this session when we describe the different types of tab you can set)

- `Zero` records if the number 0 is written with or without a slash through it
- `Scale` records the Pitch used to mark out the Ruler Line

The settings that are displayed to start with are the details of the Layout that is currently in use – the Default Layout in this case. We shall now see how to change these settings.

Setting the margins

Suppose, for example, that you wanted to set the lefthand margin at character position 15 as marked on the Ruler line (which, you remember, is marked out in the Scale pitch – not in your chosen Character pitch).

The first step in changing either of the margins is to move the Ruler cursor (that's the cursor on the Ruler line) to the new position for the margin. So press the [←] and [→] keys until the Ruler cursor is at character position 15. As with the Text cursor, the edge of the cursor to worry about is the lefthand edge.

When the Ruler cursor is in place, bring the Margins menu onto the screen. If you look at the third Information line, you will see that the key to press is [f1].

The Margins menu is another of LocoScript 2's 'Commands' menus – with an arrow beside one of the options to show that this option is currently selected.



Check that `Set Left Margin` is selected (it should have been pre-selected for you); then press [ENTER]. The lefthand margin then instantly leaps to the new position.

To set the right margin to character position 65, say, you go through very much the same steps – positioning the Ruler cursor and then pressing [f1] to bring the Margins menu onto the screen. However, this time the option to select is `Set Right Margin`. The righthand margin moves to its new position when you press [ENTER].

Setting and clearing tabs

Tabs are markers that tell LocoScript where you want pieces of text directly under one another, for example in a table. They provide a very much better way of aligning text than typing spaces – particularly if you use proportionally spaced characters, because then what you align on the screen using spaces won't necessarily be aligned when you come to print your document.

There are a number of different types of tab – Simple tabs, Right tabs, Centre tabs and Decimal tabs, each with their own way of aligning text.

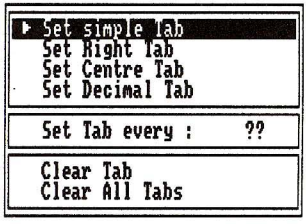
For the most part, you will just want 'Simple' tabs. A Simple tab is the sort of tab you get on a typewriter – ie. one that sets the position of the first letter you type

after pressing [TAB]. It is also the type of tab you need for such things as indenting the first line of a paragraph or indenting the whole of a paragraph.

The other types of tab are mainly for use in tables, as we shall see later in this session.

The steps involved in setting and clearing tab positions are like those you have just used to set the margins – but using the Tabs menu instead of the Margins menu. If you look at the Information lines, you will see that the key to press to bring the Tabs menu onto the screen is [f3].

For example, to set a tab position at character position 20, move the Ruler cursor to position 20 and then press [f3].



As you see, this menu gives you a choice of different tabs to set.

The Tabs menu is another of LocoScript 2's 'Commands' menus – so all you have to do to put in the tab is select the option that gives you the right sort of tab and press [ENTER]. Thus to put a Simple tab at character position 20, you select `Set simple Tab` and press [ENTER]. A Simple tab marker then appears on the Ruler line at character position 20.

For practice, now go through the same steps again – this time, putting a Simple tab at character position 25.

To get rid of a tab you put in the wrong place or you no longer need (say, the tab you have just put at character position 25), move the Ruler cursor to the tab position and then either press [⊟] or call up the Tabs menu again. This time you want the bottom section of the menu.

In general, you will want the `Clear Tab` option – which clears the tab picked out by the Ruler cursor. However, if what you really want to do is to get rid of all the tabs on the Ruler line, the option to use is `Clear All Tabs`.

Select `Clear Tab` now. LocoScript 2 clears away the tab when you press [ENTER].

To move a tab, you combine these actions – inserting a new tab at the new position and removing the tab at the old position. So, for example, to move the tab you have just inserted at position 20 to position 25, move the Ruler cursor to position 20 and either use the `Clear Tab` option or press [⊟] to remove this tab; then move the Ruler cursor to position 25 and use the `Set Simple Tab` option to insert a fresh tab there.

If you want to set up a number of these simple tabs at regular intervals across the page, you don't have to set these up individually. Instead, you use another of the Tab menu options – `Set Tab every ??`.

Suppose, for example, that you wanted tabs at every 8th position all the way across the page. To do this, move the Ruler cursor to the Left Margin and then press [f3] to bring the Tabs menu onto the screen. When the menu appears, move the Menu cursor down to `Set Tab every ??` and type 8 – the spacing you want for these tabs: then press [ENTER]. LocoScript then puts in Simple tabs at every 8th position across the page starting at Character position 23 (8 after the current position of the Ruler cursor, which you have just positioned at character position 15).

Note: The initial Layout of a document can handle up to 15 tabs. If you need more than this, you need to set up one of the 'alternative' Layouts described below.

Setting other aspects of the layout

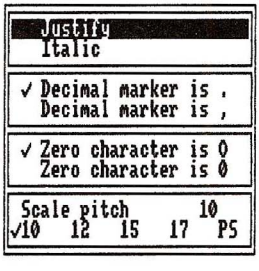
Other aspects of the layout are set by using the other two menus, Size and Options.

The Size menu is exactly the same as the Size menu you used in the last session to tell LocoScript 2 to 'turn on' a different Character Pitch, Line Spacing, CR Extra Spacing or Line Pitch. And it works in the same way: you use the Menu cursor to pick out the settings you want and press the [⊞] key to set these.

The only difference appears when you press the [ENTER] key to tell LocoScript 2 to go ahead with these settings. Instead of inserting word-processing codes, the details on the second Information line change to the settings you have picked out.

So, for example, to change the Character Pitch to 12 and to set a CR Extra Spacing to ½, press [f4] ([SHIFT]+[f3]) to bring the Size menu onto the screen and then set 12 Pitch and a CR Extra Spacing of ½ exactly as you would to put the necessary codes into your document. When you press [ENTER], look at the Information lines and see how the details displayed there change.

When you want to set whether the text will be justified or unjustified, the menu to use is the Options menu. This is brought onto the screen by pressing [f8] ([SHIFT]+[f7]).



The Options menu is another of LocoScript 2's 'Settings' menus, so you change the current settings by pointing to options with the Menu cursor and pressing [⊞] to set the option, [⊟] to clear it or the Space Bar to 'toggle' between set and clear – exactly as in all other 'Settings' menus.

`Justify` is the option you are likely to use most often. When this option is set, both the right and the left edges of the paragraph will be straight. Otherwise, the right side will be ragged.

The Default Layout makes the document unjustified, giving it a ragged right edge. To make your text justified, press [f8] to bring the Options menu on the screen, select the `Justify` option and press [+]. When you press [ENTER] the second Information line changes to show that this option has been set.

Note: By all means, experiment with setting and clearing the `Justify` and `Italic` options of the Options menu but you are strongly advised not to change the other three settings at this stage. Before going on, leave `Justify` cleared.

Returning to the document

When you are happy with the Layout you have, press [EXIT]. You are then returned to the document. (There may be a slight pause as LocoScript relays your document up to the Text cursor. As you remember, it is a rule in LocoScript that your document is correctly laid out up to your current working position.)

Before you do anything else, scroll through the document looking to see what effect changing the Layout has had. (Keep pressing the [↓] key or the [PARA] key to do this.)

Notice how a number of the lines now reach into the righthand margin. The reason for this is that the Ruler line is marked out to show the number of 10 pitch characters you can get across the page but the new Layout uses 12 pitch characters. As we pointed out before, the screen can only show one size of characters, so lines of 12 pitch characters are apparently longer simply because you get more characters on a line.

You may find this mismatch disconcerting but you should never need to worry: just trust LocoScript. It will always get where the next line should start right, whatever character pitch you use.

Another thing to do is to move the Text cursor up and down the document and notice how the line number given at the top of the page changes. This number no longer steps up smoothly in ones because the new Layout has a CR Extra Spacing of ½. The screen doesn't show this CR Extra Spacing but it is included in the line number which records the number of standard lines down the page you are working. Once again, don't worry – just trust LocoScript: it will get the page breaks right.

• Before you go on to the next step, press [EXIT], select `Abandon Edit` and press [ENTER]: then edit this document again by pressing **E** followed by [ENTER] as before.

Alternative Layouts

So far, we have just been concerned with setting up a Layout for the whole of your document. In general, this will give you all the margins, tabs etc. that you need.

However, you may well need different margins and tabs, for example, for tables or for paragraphs that you want to indent from both the left and the right margins. With LocoScript 2, all you have to do is:

- tell LocoScript where you want to start using this different Layout, and
- set up the details of this Layout

This puts a special code into the document which records all the details of the new Layout and tells LocoScript to use this new Layout for the text that follows the code. This code is displayed on the screen as `(LayouT)`.

When you want to finish using this Layout and use a different Layout, you just do the same again. Once again, this puts in a `(LayouT)` code, but this time the code contains different details – the details of the Layout to be used from here on.

Once you have told LocoScript the details of the Layout you want to use, it remembers these – whatever changes you make to the text itself. The only way it can lose this information is if you delete the Layout code itself.

However, this doesn't mean that you are stuck with this way of laying out text until you delete the current Layout code and put in another. Whenever you want, you can change some or all of the details recorded in the Layout code – giving you a new definition of how the text should be laid out. These changes affect the way the text is laid out in the area you are working – but nothing more.

Important: Every time you change to using a different Layout, LocoScript starts afresh on all its special settings. The character size becomes the one set in the Layout, the Line Spacing becomes the one set in the Layout etc. etc. LocoScript also clears all the character emphases like Bold, Italic and Underline – so if you want these to continue into the new Layout, you must follow the `(LayouT)` code with the appropriate 'turn on' codes for the print effects you want.

Setting up a New Layout – for a table

Suppose you wanted to set up this table at the end of the document:

Description	Part No	Unit price	Number	
Wall Unit	WU321	@ £24.80	3	74 .40
Brackets	MB326	@ £6	4	24
Attachments	AT328A	@ £0.99	1 set	.99
Total				£99 .39

The first step is to position the Text cursor where you want to start using the special Layout. In our example case, this means moving the cursor to the end of the document (for example, by pressing [DOC]).

Then press [f2] to bring the Layout menu onto the screen. The option you want this time is `New Layout`: select this option and press [ENTER] now.

The details that are displayed to start with are the details of the Layout that is currently in use at the Text cursor. LocoScript assumes that you will probably only want to change one or two aspects of the new layout. In this case, for example, you only want to set the position of some tabs.

The new layout is set up exactly as you set up the 'main' Layout – by positioning the Ruler cursor (if necessary) and then using the appropriate menu option. What we are going to look at here is the special case of setting up tabs for a table. (You can set up to 30 tabs in this new Layout if you so want.)

Tabs for tables

The columns of this table need to be lined up in different ways:

- In the first and second column, the lefthand end of each entry is to be aligned
- In the third column, the righthand ends of the entries are to be aligned
- In the fourth column, each entry should be centred
- In the last column, the decimal points of the number are to be lined up

LocoScript has a different type of tab for each of these cases.

- To align the lefthand ends, use a Simple tab – the type of tab used already
- To line up the righthand ends, use a Right tab
- To centre the entries over each other, use a Centre tab
- To line up the decimal points, use a Decimal tab

So the Layout for this table needs a Simple tab at position 28, a Right tab at position 47, a Centre tab at position 54 and a Decimal tab at position 62. (You don't need a Simple tab for the first column because this column starts at the left margin and so will automatically be aligned along its lefthand edge.)

Start by clearing away the tabs you don't want. To do this, bring the Tabs menu onto the screen and select `Clear All tabs`.

Then insert new tabs as follows:

- To insert the Simple tab, move the Ruler cursor to position 28, bring the Tabs menu onto the screen select `Set simple Tab`
- To insert the Right tab, move the Ruler cursor to position 47, bring the Tabs menu onto the screen and select `Set Right Tab`
- To insert the Centre tab, move the Ruler cursor to position 54, bring the Tabs menu onto the screen and select `Set Centre Tab`
- To insert the Decimal tab, move the Ruler cursor to position 62, bring the Tabs menu onto the screen and select `Set Decimal Tab`

Giving the Layout a Name

The final aspect of the Layout to set is its Name. Setting a Name isn't essential, but it's very helpful: the name of the Layout you are currently working with is displayed on the second Information line as you edit the document.

Layout names are up to twelve characters long and, as with document names, it is a good idea to pick a name that reminds you what the Layout does. However, you are nothing like as restricted in your choice of a Layout name as you are in choosing a

document name. Not every character you can type can be used – for example, you can't use symbols or Cyrillic characters – but you can include (among others) both capital and lower case letters, spaces, hyphens, Greek letters and even some accented characters. (A full list of the characters you can use is given in Appendix III.)

Suppose you chose the name `Table` for the Layout you have just set up. To give it this name, press [f7] to bring the Name 'menu' onto the screen.



To start with, this shows the name of the Layout you based your new Layout on (ie. the current Layout when you started to set up the Layout.)

To set the new name, you can either edit the old name exactly as you would normal text (there is a small cursor within the band of highlighting that you can position with the Cursor keys) or you can press [⌫] to clear away the old name and type the new name afresh. *Pressing [⌫] clears away everything to the right of the small cursor: this is true for any slot for information in a LocoScript menu.*

So, to set the name of this Layout, press [⌫] to clear away the old name and then type `Table`. Finally, press [ENTER] to tell LocoScript to go ahead with this name.

Returning to the document

When you have set the Layout you require, press [EXIT]. You are then returned to the document.

LocoScript 2 has inserted two things in your document associated with your new Layout:

- a `(LayouT)` code
- a ↵

```
All of the units marked on the price list with a # are
available from stock, for immediate delivery. Otherwise we
would normally quote six weeks from receipt of order.↵
↵
For example, if you were to choose the Swedish style of
finish, the total cost would come to just £99.39 - made up
as follows:↵
↵
(LayouT)↵
```

The `(LayouT)` code is the special code that holds all the information about the Layout. (You can see this code if you use the Options menu ([f8]) to display word-processing codes.) The ↵ has been inserted so that you can make use of all the features of the Layout straight away. Most aspects of the layout take effect immediately in any case, but the new margins only come into play on the line following the code. This often means in practice that you get an extra blank line in your document: if you don't want this extra line, rub out either this or the preceding ↵ with the Delete keys.

Using the special types of tab

To show you how these tabs work in practice, we shall now type in the table we described above:

Description	Part No	Unit price	Number	
Wall Unit	WU321	@ £24.80	3	74 .40
Brackets	MB326	@ £6	4	24
Attachments	AT328A	@ £0.99	1 set	.99
Total				£99 .39

Now that you have the Layout code for this table in the Document, all you have to do is simply type in this table as follows:

`Description` [TAB] `Part No` [TAB] `Unit price` [TAB] `Number` [RETURN]
`Wall Unit` [TAB] `WU321` [TAB] `@ £24.80` [TAB] `3` [TAB] `74.40` [RETURN]
etc.

In other words, type each piece of text in the table quite normally but when you want to move from one column to the next, simply press [TAB] and then carry on typing the next bit of text. You don't need to do anything difficult like typing the right number of spaces as you might well have to do on a typewriter!

Watch what happens as you type each of the entries so that you see the effects the different types of tab have.

As you type `Unit price` (and all the entries in that column), notice how the letters are pushed to the left by each new character you type. The reason for this is that you are working here with a Right Tab – which, you remember, tells LocoScript that you want the righthand edge of all the entries in the column to be aligned. LocoScript shuffles the characters in this way to ensure that all the entries end in the same place.

As you type `Number` (and the other entries in this column), you will see a similar but different action as LocoScript responds to the Centre Tab. In order for all the entries in this column to be centred about the tab position, LocoScript does some shuffling to the left but not as much as for the Right tab.

As you type the final column of numbers (`74.40`, `24` etc.), you will see LocoScript shuffling characters to the left again – but only until you type the decimal point. Any characters you type after this character are positioned normally. This is how LocoScript ensures that the decimal points in the entries are aligned.

Note: Layouts are normally set up for decimal numbers like `35.20` where the character to align in a column of decimal numbers is full stop. If you want to align decimal numbers written in the Continental style (for example, `35,20`), you must use the Options menu in the Layout Editor to set comma as the character that marks the decimal point.

Changing the Layout

As well as creating new Layouts to use, you can also change the Layout you are working with at present. Suppose, for example, that you want to change the Layout for the table because the gap you have left for the Description is one character too small.

As always, the first thing to think about is the position of the Text cursor. In this case, all you need to ensure is that the cursor is in the part of the document that uses this Layout. In this case, you just need to make sure that the Text cursor is on some part of the table.

When the cursor is in place, press [f2] to bring the Layout menu onto the screen and select the `Change Layout` option. When you press [ENTER], LocoScript puts you into the Layout Editor.

You can now change any of the details of this Layout – including its name – exactly as if you were setting the Layout up for the first time. So to reset the Tab positions, you position the Ruler cursor, press [f3] to bring the Tabs menu onto the screen and use the options of this menu to set and clear tabs – exactly as we showed you earlier in this session.

When you are ready, press [EXIT]. This returns you to the document but there is then a slight pause as LocoScript relays the table up to the Text cursor. As you remember, it is a rule in LocoScript that all the document must be correctly laid out up to the current working position. If you then move the cursor down to the bottom of the document, you will see the rest of the table being relaid as well.

Using the same Layout elsewhere in the document

As we said earlier, all the information about the Layout is held in the `(LayouT)` code – so whenever you want to use the same Layout again, somewhere else in the document, all you need to do is to make a copy of the `(LayouT)` code and the Carriage Return, and paste it in front of the text you want laid out in the same way.

For example, if you wanted to insert a similar table between the first and second paragraphs of the example document, you could save yourself the trouble of setting up all those tabs again by storing a copy of the `(LayouT)` code already in your document in a Block (see Session 6) and then pasting it in at the new position – exactly as if the code were a piece of text.

Copying the Layout code into a Block, say, is best done with the word-processing codes displayed on the screen. So if necessary, start by using the Options menu ([f8]) to display these codes. With the Layout code displayed on the screen, position the Text cursor immediately in front of the code and press [COPY]; then place it immediately after the code and press [COPY] again. Now store the code in a free Block – by typing, say, 0 to store it in Block 0.

To paste a copy of this code between the first and second paragraphs, put the Text cursor at the beginning of the blank line between these paragraphs, press [PASTE] and type `0`. You have now inserted an exact copy of the Layout you used at the bottom of the document – and all the text that follows this code now has the Table Layout.

Note: Pasting in this Layout code has changed the Layout of all the text between the newly-inserted code and the next Layout code down the document. As a rule, you will now need another `(LayouT)` code that restores the 'old' Layout.

Stock Layouts

In a well-designed document, you will use a small number of different Layouts for particular types of text. For example, you may well have one Layout for the text itself, another for the Introduction and a third for Notes.

Setting up these three Layouts and then copying them to different parts of the document via the Blocks is not an ideal way of working – so LocoScript 2 has a better solution. This is a set of 'Stock' Layouts which you can use as **patterns** for new Layouts – ie. what you get in the Layout code is a copy of all the settings in the Stock Layout.

A LocoScript 2 document can have up to ten of these Stock Layouts – ready set up (along with other information) in the 'Document Set-up'. (We will show you how to set up Stock Layouts in Session 18, when we describe how to change the Document Set-up.) What is more, these Stock layouts can be automatically set up in new documents you create, as we shall see in Session 24 – making it particularly easy to apply a set 'Style' to a series of documents.

Stock Layouts have names and numbers. The names are used to describe the types of paragraph the Layouts are meant to be used for. For example, this Example document has a Stock Layout called `Intro` – which you could use for the first paragraph. The numbers are always `0...9`. We shall see later how both names and numbers are used to tell LocoScript 2 that you want a copy of a particular Stock Layout.

All the Stock Layouts define a pair of margin positions, a character size, a line spacing, tab positions, etc. However, Stock Layouts 0 and 1 are special in that Stock Layout 0 is the one used for Headers and Footers (see Session 17) and Stock Layout 1 is the layout that is automatically used at the beginning of the document.

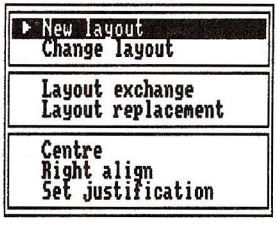
Using a Stock Layout

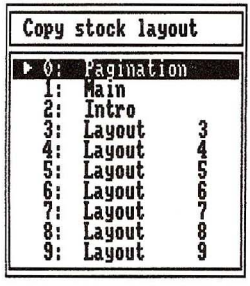
Using a Stock Layout is just like setting up and using an alternative Layout – except that, instead of setting the margins, etc. individually, you tell LocoScript to set up a Layout with the same settings as the Stock Layout.

To show how this is done, we shall now put in the instructions to use a layout that we have set up for you – the `Intro` Layout – for the first paragraph.

The first step is to position the Text cursor. In this case, put the cursor on the line above the first paragraph. When the cursor is in position, press [f2] to bring the Layout menu onto the screen.

The option you want here is again `New Layout`. Move the Menu cursor to this option: then press [ENTER] to tell LocoScript to go ahead. When the Layout Editor menus appear, press [f5]. LocoScript then puts another menu on the screen:





This menu lists all the Stock Layouts that have been set up – giving both their names and their numbers. It is a Commands menu – so you just point with the Menu cursor to the Stock Layout you want and press [ENTER]. In this case, the Stock Layout you want is the one called `Intro`. Then press [EXIT] to return to your document.

When you press [EXIT], LocoScript inserts another (`LayouT`) code into the document (this one holding the same details as the Intro Layout) and starts a new line. As before, the new line is inserted so that you start using this layout immediately: rub out the extra ↵ if you don't need it. Be careful not to delete the new layout code at the same time!

The Layout code tells LocoScript to use this Layout until told otherwise, so you now need to insert another Layout code at the end of the paragraph to tell LocoScript to go back to using the original Layout – Stock Layout 1 – for the next paragraph. Use similar steps to the ones given above to put in a Layout code that holds the same details as Stock Layout 1.

Important: Layouts that you set up by copying a Stock Layout can be changed in exactly the same way as other Layouts. And, once again, the changes only affect the details stored in the Layout code that applies to the part of the document you are working on: in particular, they don't affect the Stock Layout you copied when you were creating the new Layout. (This is a major difference between LocoScript 2 and the earlier LocoScript '1' where changing a Layout was tied in with changing all the other uses of the same Layout.)

However, there is one important exception to this rule. If you change the Layout of the text before the first (`LayouT`) code in the document, you automatically change

Stock Layout 1 as well. This is the effect that we used at the beginning of this session to set up the margins, etc. we wanted for the whole of the example document.

It's also important to remember that the details held in the Layout code are a copy of the details set for the Stock Layout **when you put the Layout code into the document**. If, later, you change the Stock Layout, you don't automatically change the copies of the Layout in the document. (We will be seeing the procedure that you can take to 'update' Layouts throughout a document in Session 18.)

Using keystrokes to use a Stock Layout

When the Layout you want is simply a copy of one of the Stock Layouts, then there's no need to use the Layout menu. Instead you can use a sequence of keystrokes (or the corresponding Set or Clear menu) to change between using one Layout and another – very much in the same way that you use these to turn on and turn off changes of style like bold or italic (see Session 10) or changes of character pitch or line spacing (see Session 11).

To demonstrate the keystrokes you need to use, we shall apply the Intro Layout to the third paragraph. As before, the first step is to position the Text cursor, immediately above the first line you want laid out with this layout. So move the Text cursor in front of the ↵ on the previous line.

The code that tells LocoScript to go over to using a particular layout doesn't begin with a –, so the first keystroke is to press [⊞]. Then type `LT2: LT` because you want to insert a `(LayouT)` code and 2 because this is the **number** of the `Intro` Layout you want to use. Then, because you typed a number, press [ENTER]. As we pointed out in the last session, whenever the keystroking includes a number, the last key of the keystroking is always [ENTER].

These keystrokes insert a `(LayouT)` code that holds all the same details as the `Intro` Layout. LocoScript doesn't automatically give you a new line this time – instead it leaves it up to you to decide whether you need to insert an extra Carriage Return. (Remember, some of the settings of a new layout don't take effect until the line after the code.) Here, you don't need another new line because we have carefully put the Layout code on the line above the paragraph.

Now move the Text cursor to the start of the blank line below this paragraph. This time, press [⊞] and type `LT1` [ENTER]. This code tells LocoScript to go back to using Layout 1 – the Layout that's being used for the majority of the text.

(If you didn't want to go back to Layout 1 but to use, say, Layout 3 next, you would press [⊞], type `LT3` and press [ENTER] to put in a `(LayouT)` code – in exactly the same way as we put in the `(LayouT)` code containing the same details as the `Intro` Layout above. You don't have to go back to Layout 1 before you go on to using Layout 3.)

That's all there is to it – except to check that there is a Carriage Return between the Layout code and the text you want it to apply to.

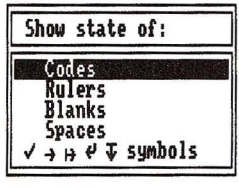
Displaying the different layouts

When your document uses a number of layouts, each with different margins and tab positions, you can always get a rough idea of what these margins and tab positions are by looking at the way the text you type is laid out. LocoScript gives as faithful a representation as possible on the screen.

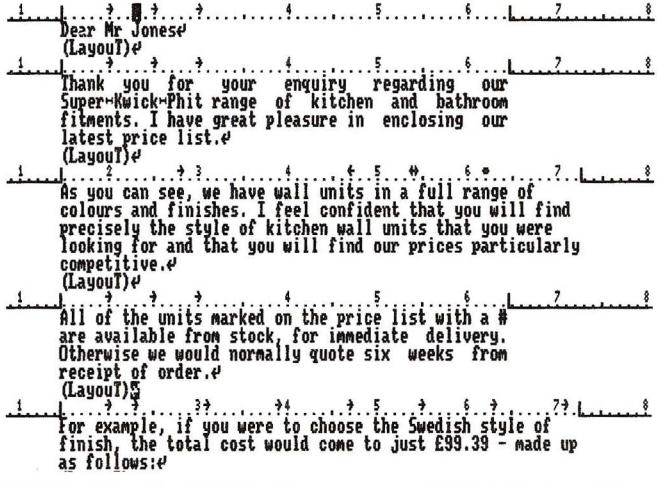
Sometimes, for example when you are adding entries to a table, you will need to know where the margins and tabs are in more detail. LocoScript gives you two ways of seeing this.

Firstly, you can use the Ruler line. This displays the margins and tabs at the current position of the Text cursor. So by looking at the Ruler line, you can always see what margins and tabs are in force where you are working.

The alternative is to use another of the options in the [f8] Options menu – the Rulers option.



With the Rulers option set, you see a Ruler line above each paragraph where there has been a change of layout – whether to one of the extra layouts or back to Layout 1. These extra Ruler lines let you see the pattern of margins and tabs anywhere in the document – not just at the place you are working.



• Finally in this session, press [EXIT] and select `Save and Print`. Now you will really see the results of your efforts.

Session summary

In this session, you have seen:

- What Layouts are and, in particular, what Stock Layouts are
- How to set up the margins, tabs etc. you want for the whole document
- How to make use of the Stock Layouts
- How to set special margins, tab settings etc. for particular paragraphs
- How to go about setting up a table

Session 13

Direct printing

When you have a pre-printed form to fill in, you don't have to go back to using the typewriter you parked under the stairs. Instead, you can use your PCW as if it were a typewriter – but with the added advantage that you can still use all the facilities of LocoScript to perfect and style the text before it goes onto the form. What you do is use LocoScript in its Direct Printing mode.

You use the Direct Printing mode from the Disc Manager Screen, so the first step is to display this screen. (Turn back to page 41 if you are not sure how to do this.)

When the Disc Manager Screen is displayed, press the 'D' letter key and then press [ENTER] to confirm that you want to go ahead. (D for Direct Printing should be easy to remember but, as usual, it is written on the second Information line in case you need to check.) LocoScript then displays a screen very like the screen you see when you start work on a new document.

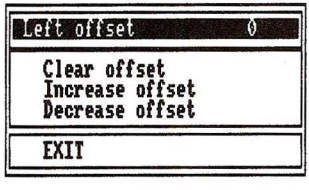
You could now start typing the text you want to put onto this form – but before you do this, it is best to get the printer ready to print on the part of the page you want.

Getting the right print position

Load a piece of paper into the printer – if you have a form to hand that you could fill in, use this – but don't press [EXIT] yet. You have some printer adjustments to make first to ensure that the printer prints in the right position on the paper. These adjustments can only be made while LocoScript is in its Printer Control State. (Remember: loading the paper into the built-in printer automatically puts LocoScript into its Printer Control State.)

To get the right position down the page, turn the Paper Feed Knob on the side of the printer until the line of the paper you want to print on is lined up with the print head.

Once the position down the page is right, you then set the position across the page. This is known as 'setting the Left Offset'. The Left Offset is the distance the print start position is shifted to the right of its normal start position. The menu that helps you do this is the Left Offset menu. By looking at the Information lines, you will see that this menu is brought onto the screen by pressing [f6] ([SHIFT]+[f5]).



The top line of this menu gives you the current setting of the Left Offset; the rest forms a menu of commands that you can use to change the Left Offset. The current setting is simply whatever Left Offset you used last.

If you know where you need printing to start, as so many tenths of an inch from the printer's natural start position, then you can type this in directly. Leave the Menu cursor on the `Left Offset` line at the top of the menu and type in the Left offset you need in tenths of an inch. For example, if you know you want a `Left Offset` of at least 1.5", type `15`. Then press [ENTER] to confirm this is the Left Offset you want and then press [ENTER] again to clear away the menu..

In general, you won't know this distance – so, instead, you move the Menu cursor to `Increase Offset` (if you want to move the print position over to the right) or `Decrease Offset` (if you want to move the print position to the left). If the Offset is currently zero, the only sensible option to select is, of course, `Increase Offset`

Notice how the option you select with the Menu cursor becomes marked with a diamond. This diamond shows that the options in this menu are a special kind of Command option – one in which LocoScript carries out the command that's selected when you press [ENTER] and **then returns to the current menu**. In a way, a diamond works like a pair of arrows back to back – going to carry out your command and then coming back. This action makes it easy for you either to select another command from the menu or to repeat the same command, as we shall do here. In this instance, the result is almost as if you are moving the print head directly by pressing [ENTER]. **Note:** Only the built-in printer is guaranteed to show you the Offset you are setting by moving the print head. Other printers may not.

Press [ENTER] repeatedly until the print head is over where you want the first letter you type to be printed. As you move the head, you will see the Left Offset in the menu change. When the print head is in the right place, you move the Menu cursor down to the EXIT option at the bottom of the menu and press [ENTER]. You can move the Menu cursor to this option with the Cursor keys in the usual way, but the quick way to get to this option is simply to press [EXIT].

The printer is now set up to print in the right position, so you can leave Printer Control State (by pressing [EXIT]) and go back to preparing the text you want to print.

Preparing the text

Type something – anything will do – but for the moment, don't press [RETURN]. If you make any mistakes, correct these exactly as if you were preparing a document.

If you want to insert an existing Block of text or one of your Phrases (see Session 15), then you can just Paste these in. Although it is important that you shouldn't press [RETURN] at this stage, it doesn't matter if the text you paste in includes ↵s.

Indeed, a neat way of getting the same address on an envelope as you have in a letter is to copy the address in the letter to a Block (see Session 6), and then paste this Block in when you use Direct Printing to prepare the envelope.

When you have set up the text you want, you then need to consider:

- whether you need to change the position of the righthand margin so that LocoScript won't print off the edge of the page
- what Character Pitch, Line Spacing etc. you want to use and whether you want to apply any special styling (Bold, Italic, etc.)

You make these changes in exactly the same way as you do while you are working on one of your documents. You can change any feature of the Layout – margins, character pitch etc. – with the aid of the Layout menu ([f2]), just as we did in the last session. Similarly, you can add styling to the text either by using the Style and Size menus or by using keystrokes to put in the relevant word-processing codes – exactly as described in Sessions 10 and 11.

Inserting the text

When you have set up the text you want, between the correct margins and embellished in the way you want, press [PAGE] to move the Text cursor immediately after the last letter of your text and then press [RETURN]. LocoScript immediately clears the screen and prints what you typed, starting each line at the left offset position you set. When it has finished you can prepare another line or paragraph. (**Note:** If you don't type any text before pressing [RETURN], LocoScript interprets this as a blank line which you want to precede the next piece of text you type and it saves it to print with this text.)

Each time, before you press [RETURN], check that the print head is over the point at which you want printing to start. Turn the Paper Feed Knob so that printing will start on the right line; press [PTR] and then use the Left Offset menu as described above if you want printing to start at a different place on the line.

Finishing

To finish using LocoScript's Direct Printing mode, press [EXIT]. The Exit menu that appears has two options. Either option will return you to the Disc Manager Screen. The difference between them is that the first option, `Finish Direct Printing`, will print any text you still have on the screen before returning you to the Disc Manager, whereas `Abandon Direct Printing` will throw this text away. Select the option you want and press [ENTER]. You are then returned to the Disc Manager Screen. Nothing of what you have done is recorded on disc.

Session summary

In this session, you have seen:

- How to use a Commands menu in which options are picked out by diamonds rather than arrows
- How to print something directly onto a piece of paper, and still use all the facilities for styling provided by LocoScript.

Session 14

Finding and Exchanging

In this session we look at another advantage of a word-processor such as LocoScript over a typewriter – the word-processor's ability to find particular words and to exchange one word or phrase for another throughout the document.

Why might you want this facility? Well, you might need to produce a document describing a new product before the name for the product has been finalised. Because LocoScript has Find and Exchange facilities, you can prepare the initial versions using the development name for the product, confident that you can replace this name with the final name throughout the document even at the very last moment.

The document we are going to edit in this session is called `DISCINFO` and it is stored in `group 1` (the EXAMPLES group) of your Start-of-day disc. So the first thing to do is to pick out this document with the File cursor and then open it for editing. (Turn back to Session 5 if you are not sure how to do this.)

Finding a particular word

Finding a word or phrase is essentially a way of moving the Text cursor.

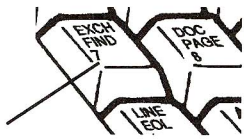
The Textual Movement keys we introduced in Session 5 move the Text cursor about your document very efficiently when you know at least the page and probably the paragraph on the page you want to move to, and how far away that is from the page and paragraph you are currently working on. Finding a word or a phrase is the efficient way of moving the Text cursor when you don't have any clear idea where the word or phrase you want to move to is.

What you do when you want to 'Find' something is give LocoScript the word or phrase to look for and tell it whether you are only interested in whole words or whether you want to know about words that have the same spelling but a different combination of capital and small letters. It then searches forwards through the text for this, starting at your current working position. How it works is as follows.

To start with, you must check that the Text cursor is positioned higher up the document (ie. nearer to the beginning) than the word or phrase you want to find – because the search is always carried out forwards through the text. If you are really unsure where the word you want is to be found, move the cursor to the start of your document (where the cursor probably is now).

Press [FIND]. Do this now. LocoScript 2 then puts up a special menu.

Find key





The slot at the top of the menu is reserved for the word, part of a word or phrase you want LocoScript to find. This 'Find text' can be up to 30 characters long, and can include carriage returns (↵) and tabs (→).

Below this is a list of the additional features you can give LocoScript 2's search:

- `Ignore Case` tells LocoScript to pick out places where the same spelling is used but not necessarily the same combination of capital and small letters. For example, ignoring the case when searching for `cat` will pick out `CAT`, `Cat` and `cat`. If you don't tell LocoScript 2 to ignore case, it will only pick out `cat`.
- `Look for whole words` tells LocoScript to reject places where your Find text forms part of a longer word. For example, looking for whole word when searching for `cat` will make LocoScript 2 reject words like `catalogue` and `scatter` that have `cat` in the middle of them.
- `Use Wild cards` tells LocoScript that the Find text you have given it is a pattern for a number of possible pieces of text. (See below)

The first job is to type in the text you want LocoScript to find.

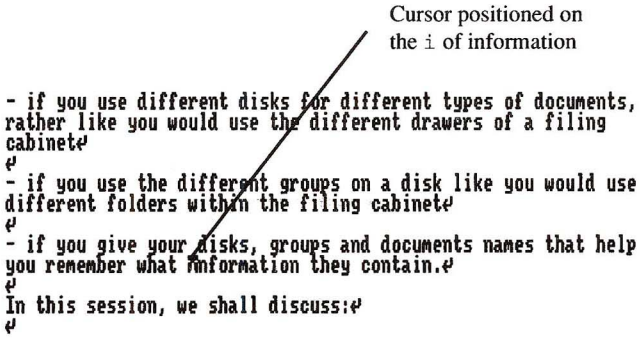
The part of the Menu reserved for the Find text is highlighted. This highlighting is a standard LocoScript Menu cursor, marking the part of the menu that is currently active. Type in the word '`information`'.

If you make any mistakes in typing this, edit it exactly as you would normal text. As in other menus where you can change the information, there is a small cursor within the Menu cursor that you can position with the Cursor keys. You can also press [⊡] to clear away everything to the right of this cursor.

Once the text is ready, the next job is to set the options for the search. We describe these options below. For the moment, ensure that all these options are cleared (by pointing to the ones with ticks beside them and pressing [⊡]) – so that we see what LocoScript will pick out for you if you don't select any of the extra search features.

The bottom entry of the menu is a 'Commands' menu with just one option – `Find next`. This is automatically selected for you – as you can see from the arrow beside it.

So when you are ready, just press [ENTER] to tell LocoScript to start 'Finding the next' example of your Find Text. LocoScript then searches forwards through the document, trying to match the Find text against the document. When it finds a section of the document that matches the Find text, LocoScript puts the Text cursor on the first character of the phrase. If LocoScript doesn't find a bit of the document that matches the Find text, it leaves the Text cursor at the end of the document.



Press [FIND] again. Up on the screen comes the same 'menu' again – but with a subtle difference. This time the top part of the menu already contains the Find text you typed in last time. This is so that you can readily repeat the search.

You can now search for something else – by changing the existing Find text to this new text – or you can choose different additional search features. But if you simply want LocoScript to look for this again (because, say, the section of the document LocoScript found isn't the one you wanted to move to), you just press [ENTER] to tell LocoScript to go ahead.

So to find the next place `information` is in the example document, all you have to do is press [ENTER]. LocoScript then searches forward again, matching the Find text against the document. It succeeds so the phrase is once again picked out, but this time you are looking at a different part of the document.

Now go back to start of document and press [FIND] again, but this time give LocoScript a different Find text to search for – `disc`. Press [←] to clear away the old text before typing the new text you would like LocoScript to search for. When the new Find text is ready, press [ENTER].

When LocoScript stops this time, press [FIND] and then immediately [ENTER] so that it finds the next example of `disc`. Then do this a few times more, just to see which examples of `disc` LocoScript picks out.

Using the search options

Having searched for `disc` with none of the search options selected, it's now worth seeing how the search changes when you tell LocoScript to ignore case and to look only for whole words, and how to give it a pattern to look for – rather than a real word.

Ignoring case

Move the Text cursor back to the top of the document (for example, by using [ALT]+[DOC]); then bring the Find menu onto the screen again. This time, leave the Find text alone but select the `Ignore case` option (ie. point to `Ignore case` with the Menu cursor and press [⊞] or the Space Bar to set this option).

Now press [ENTER] to tell LocoScript to carry out its search. Then use [FIND] again some more times – without altering either the Find text or the options – to see what LocoScript finds now you have told it to ignore case. Notice how it is picking out all the same instances that it did before, but it is also picking out some new ones – `Disc` and `Discretion`, for example. Telling LocoScript to ignore case has extended the search to a number of other instances of the letters `disc`.

Whole words only

Once again, move the Text cursor back to the top of the document and bring the Find menu onto the screen again. This time, select `Look for Whole Words` (again, by pointing at this option and pressing [⊞] or the Space Bar).

Press [ENTER] to start LocoScript searching and then use [FIND] some more times – without altering either the Find text or the options – to see what LocoScript finds this time. Notice how now it is only picking out `disc` and `Disc:` in particular, how it is not picking out words like `discs` which have the search word as their root. When you ask for Whole Words, LocoScript takes you literally and just gives you precisely what you asked for.

Using wild cards

The other search option – `Use Wild cards` – allows you to give LocoScript the 'pattern' of a word or a few words to look for rather than the exact words. For example, if you wanted LocoScript to search for either `disc` or `disk`, then you could tell LocoScript that you want words that match the pattern `dis`*(some letter)*.

The key to creating this pattern is the 'Wild card' character `?` which LocoScript understands as standing for any character. So, for example, the pattern that can be used to pick out both `disc` and `disk` would be `dis?`.

To see this in action, move the Text cursor back up to the top of the document and press [FIND] again. Clear away the old Find text (by pressing [⊟]) and replace it by `dis?`; then make sure that all three of the search options are selected (ticked). It

is particularly important to check that the `Use Wild cards` option has been selected – otherwise LocoScript will just look for `dis?`

Press [ENTER] to start LocoScript on its search and then use [FIND] some more times – again, without altering either the Find text or the search options. You should see it pick out both `disk` and `disc`.

• That's all there is to Finding words or phrases in even very long documents.

Exchanging one word for another

Exchanging a word or phrase for another is the quick and reliable way of changing all references to one product, say, into references to another product.

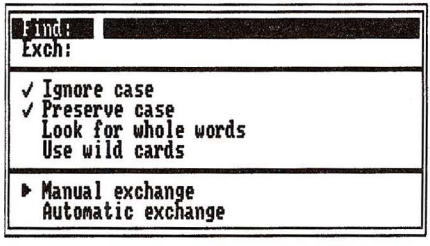
You might, for example, have a sales brochure for an old product on disc that you want to use as the basis for the brochure for your latest product. As a first step, you could use LocoScript's 'Exchange' facility to replace the old product name by the new one throughout the document.

Exchange is essentially the Find facility we introduced above with added features so that it doesn't just search for a phrase, it also replaces that phrase with new text. You should notice a number of similarities between Find and Exchange.

To demonstrate using Exchange, we shall use it to replace first all the instances of `disk` by `disc`, and then some of the instances of `document` by `file`.

Like Find, Exchange always works forwards through the document from your current working position so you must start with the Text cursor higher up the document than the first word you want to change. In our case, this means moving it to the very beginning of the document (for example, by holding down [ALT] while pressing [DOC]).

When the Text cursor is in place, press the [EXCH] key. Do this now. (EXCH is the upper option on the [FIND] key, so to press [EXCH], you hold down the [SHIFT] key while you press [FIND].)



The top slot of the Exchange menu is once again reserved for the Find text – the word, part of word or phrase you want it to replace. The similar slot below this is for the Exchange text, ie. what you want LocoScript to put in instead. Both phrases can be up to 30 characters long, and can include ↵s and →s – exactly as for Find.

Below this are the different options that LocoScript 2 offers for the exchange. Three of these will be familiar to you – because they are the three search options you used when you were Finding words, earlier in this session. These options are again used to refine the search side of the operation.

The other option – `Preserve case` – tells LocoScript to copy (as far as possible) the current use of capital and small letters in making the replacement. For example, if the current word is `Cat` and the exchange text is `dog`, LocoScript 2 will insert `dog` if case isn't preserved but `Dog` if case is preserved. We will see this in practice shortly.

The bottom section of the menu is a 'Commands' menu, offering you the choice of 'Manual' exchange or 'Automatic' exchange. We will see what these options offer below.

Filling in the Exchange menu

When the Exchange menu appears on the screen, both slots at the top of the menu could be empty or both could have some text already in them or just the top one could be filled in – depending on what you have done so far in this editing session.

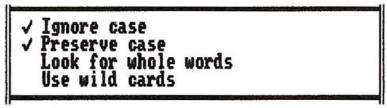
The top slot will be filled in if you have already searched for a particular word or phrase – either by using this Exchange feature or by using Find. This text is the last Find text you used. The second slot will be filled in if you have already used Exchange.

The menu is filled in like this so that you can readily repeat the same Exchange that you did earlier. Again, LocoScript is making it as easy as possible to continue with the current task.

The Menu cursor is initially on the Find text, so start by editing this to the new Find text. Use the same steps as above. (Remember: if you press [⊡], this will clear away everything to the right of the small cursor within the Menu cursor.) The Find text of our first exchange is `disk`.

Now move the Menu cursor down to the second slot, (if necessary, press [⊡] to clear any existing text) and type in `disc`, the Exchange text. If you make a mistake in typing this, you can edit it in exactly the same way as the Find text.

Making use of the Exchange options



When both texts are ready, move the Menu cursor down to the options part of the menu – to select the different features you want for the search.

Three of these options are exactly the same options as you had when you were Finding words – so we shall simply concentrate on the other option `Preserve case`. This tells LocoScript 2 that you want the word it inserts to copy the word it is replacing as far as possible in its use of lower case and capital letters. In practice this means:

- if the old word is all in lower case letters, then the replacement word should be as well
- if the old word is entirely in capitals, then the replacement word should be in capitals as well, and
- if the old word starts with a capital letter, then so should the replacement word

The options part of the menu is a 'Settings' menu, so you use [+], [-] and Space Bar in the usual way to set and clear options as necessary. (Details in Session 5, if you need them.) For the moment, just select `Preserve case` so that you can see this in action.

Manual or Automatic?



Now move the Menu cursor down to the bottom part of the menu.

This section of the menu gives you a choice of the two types of exchange you can have, Manual and Automatic. In a Manual exchange, LocoScript stops each time it finds the Find text and waits for you to say whether you want it to replace this one with the Exchange text or carry on to the next. In an Automatic exchange, LocoScript replaces each instance of the Find text it finds.

Which option to select depends on whether:

- you want to confirm each exchange before this is made, or
- you want LocoScript to go ahead and change every example it finds

`Manual exchange` has an arrow beside it to show that this is already selected for you – just as one of the actions in other 'Commands' menus you have used has been. Again, LocoScript has pre-selected your most likely choice of action.

Automatic exchanges

For our first exchange, we want LocoScript to go ahead and make the changes – so the option to select is `Automatic exchange`. Move the Menu cursor to this option and press [ENTER]

LocoScript now goes ahead and exchanges every `disk` it finds by `disc` without further reference to you – all the way down to the bottom of the document. You can see it making each exchange as it goes.

However, making exchanges all the way down to the bottom of the document will often be a little more 'enthusiastic' than you really want. You may well only want to exchange your search word down as far as a particular point in the document.

One way of doing this is to watch carefully where LocoScript has got to in the document and, when it has gone far enough, press [STOP]. This, you will remember, makes LocoScript pause and you can get it to abandon doing any more exchanges by pressing [STOP] again.

A more controlled way of going about this is to tell LocoScript from the start how far you want to go. To see how this works, move the Text cursor back up to the top of the document then press [EXCH] again. (Remember: All exchanges are carried out **forward** from the current position of the Text cursor.)

Now change the Find text to `document` and the Exchange text to `file` (Starting each edit by pressing [C] to clear away the old text and then typing in the new text is probably the easiest way of doing this.)

Leave the exchange options as they are and, once again, move the Menu cursor down to `Automatic exchange` so that this option is selected. But now press [PARA] instead of [ENTER]

Again, LocoScript goes ahead and replaces examples of the Find text by the Exchange text but, this time, it stops when it gets to the end of the first paragraph. Pressing [PARA] told LocoScript that you only wanted it to exchange `document` for `file` up to the end of the current paragraph. (Remember, paragraphs in LocoScript 2 are blocks of text separated by lines of white – so for example, a whole address can be one paragraph.)

Now press [EXCH] again. This time, move the Menu cursor to `Automatic exchange` and press [PAGE] instead of either [ENTER] or [PARA].

Again, LocoScript goes ahead and exchanges `document` for `file` but, this time, it stops when it gets to the end of the first page. Pressing [PAGE] told LocoScript that you only wanted it to do this exchange up to the end of the current page.

Manual exchanges

Now press [EXCH] again. This time, we want to confirm each exchange before it is made – the option that is automatically selected for you. So you just have to press [ENTER] to tell LocoScript to go ahead.

LocoScript stops at the first instance it finds of the Find text, displays a message both in the middle of the screen and in the Information lines, prompting you to press either [+], [-] or [CAN]. And it does this over and over again to the end of the document.

If the message in the middle of the screen is covering the part of the screen you need to see in order to decide which key to press, wait a moment. This message is then cleared away, leaving just the copy at the top of the screen. You can now see the piece of text LocoScript has picked out for exchange.

Press [+] to make the exchange and carry on to the next example; press [-] to simply carry on to the next example; or press [CAN] to abandon the exchange. Try out both pressing [+] and pressing [-]. When you have seen this enough, press [CAN]

- And that's all there is to exchanging one word or phrase for another.

Finally...

Finish this session by Abandoning the edit (ie. by pressing [EXIT] and selecting Abandon Edit) – so that later you can work through this session as if for the first time.

Session summary

In this session you have seen:

- How to move the Text cursor to a particular word or phrase, neither knowing which page it is on nor which paragraph it is in
- How to exchange one word or phrase for another in a particular paragraph, on a particular page or throughout your whole document.

Session 15

Moving text around

Early on in this tutorial, we showed you how to mark out a block of text within your document and then either move it to another point in the same document or put in one or more copies at other places in the document.

This kind of text movement saves you a lot of typing effort – but it only saves you from re-typing text that you have already typed in this document. How about when you want to 'poach' text from another document you've prepared or from someone else's document or documents prepared on a different word processor?

In this session, we shall show you how to:

- move blocks of text from one document to another
- insert whole documents into other documents
- set up a series of standard phrases that take just two keystrokes to insert into any document
- insert documents that have been prepared on other word-processing systems
- process LocoScript documents so that they can be used on a different word-processing system

In short, we shall show you how to move text around from any document to any other document to really minimise the amount of re-typing you will have to do.

The document we are going to edit in this session is `DISCINFO`, which you will remember is stored in `group 1` (the EXAMPLES group) of your Start-of-day disc. So, the first step is to open this document for editing. (Turn back to Session 5 if you are not sure how to do this.)

Moving text to another document

Moving or copying a section of text between one document and another uses the LocoScript system of Blocks, in exactly the same way as they are used to move or duplicate a section of text within a single document.

The feature of the Blocks system this makes use of is the way LocoScript remembers the text stored in any of its 10 Blocks after you have finished editing the current document and started editing another. As you will recall, LocoScript remembers the text you copy to a Block until you either store something else in this Block or you switch off or reset your machine.

So whenever you simply want to take some text in one document (the 'Source' document) and make a copy of this text in another document (the 'Destination'

document), all you have to do is edit the 'Source' document and copy the section of text into a Block; then edit the 'Destination' document and paste the Block in – exactly as if you were still working on the same document.

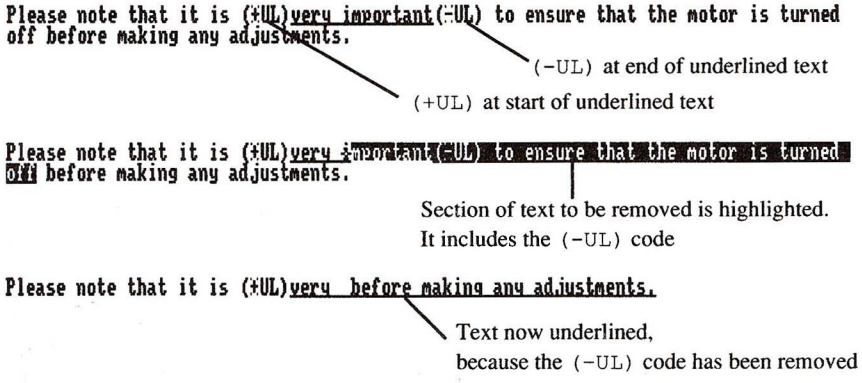
To show how this works, suppose you wanted to use the second and third paragraphs of the example document in a new document. The first step is to mark this section of text out as a Block, exactly as you marked out sections of text in Session 6. Store a copy of this text, for example, as Block 0.

Now abandon editing this document and create a new document. (As we will be suggesting you throw this new document away, don't worry about setting up a special name for it – just accept the name LocoScript suggests.) When the new document is open on the screen, paste Block 0 into this document by pressing PASTE and then typing 0 – exactly as if you were pasting it in at a new position in the 'Source' document.

That's how to move or copy text between documents through the Blocks.

Important: Moving blocks of text containing word-processing codes, whether from one point to another in the same document, or from one document to another, can produce some unexpected effects both at the place you took the text from and at the place you have inserted the text.

For example, if the text you move contains a (-UL) code but no (+UL) code, the text immediately following the place you removed the block from will become underlined but the block itself **won't** be underlined in its new position . However, this looks more of a disaster than it is – because to repair each piece of text you just need to insert a (-UL) in the place you removed the text from and a (+UL) immediately before the text you have just inserted.



A similar problem happens when you insert a block of text containing Layout codes, because the code brings with it all the information about how the text that follows it is laid out – up to the next Layout code.

Looking at the Blocks

You will usually be able to remember what you have stored in a Block and which Block you stored it in – but if you are ever unsure, you can jog your memory by looking at the first few words of each Block.

The menu that helps you do this is the Actions menu of either the LocoScript Editor (which you are using now) or the Disc Manager Screen. In either case, the Actions menu is brought onto the screen by pressing [f1]: so press [f1] now.

The Actions menu is another of LocoScript's 'Commands' menus – ie. the option that will be carried out when you press [ENTER] is the one currently picked out by the arrow. The option you want here is `Show Blocks`. Select this option and then press [ENTER] to tell LocoScript to carry out this action. What you now see on the screen will be a 'menu' like this:





Down the lefthand edge of this menu are the names of the Blocks (`0...9`) and, beside each name, is the beginning of the text stored as this Block. If there isn't anything written beside a name, then nothing is stored in that Block.

If the menu shows you have Blocks that you no longer need, you can clear these out while this menu is on the screen – by moving the cursor to the Block and pressing [C]. This has the added advantage of freeing some space on Drive M.

When you have found out the names of the Block(s) you want, press [ENTER] to tell LocoScript to carry on.

Inserting a whole document

The extreme example of moving text between one document and another is to insert the whole of the first document in the second. While you could do this by copying the whole of the Source document into a Block and pasting this in, this involves you in taking much more trouble than is necessary. You can insert a whole document directly – through the Actions menu.

Suppose you wanted to insert the whole of this session's example document (`DISCINFO`) at the beginning of the new document you have just created.

The first step, as you might expect, is to position the Text cursor where you want to insert the document. In this case, move the Text cursor to the top of the document.

When the Text cursor is in position, bring the Actions menu onto the screen. If you can't remember which key you press to bring this menu onto the screen, look at the Information lines and you will see that the key to press is [f1]. Press [f1] now: the following menu should appear





Now move the Menu cursor to `Insert text` and press [ENTER]. LocoScript 2 then displays the Disc Manager Screen so that you can pick out the document you want to insert. (The message on the screen reminds you to do this.)

Pick out `DISCINFO` in the usual way with the File cursor; then press [ENTER]. LocoScript responds with a Selection menu giving the details of the document you picked out. Check these details are right and then press [ENTER] (or [CAN] to abandon).

You now return to the document and LocoScript 2 inserts the document. This will probably take a little while: LocoScript can have quite a lot of work to do adjusting the Destination document to take account of the word-processor codes embedded in the Source document.

Transferring text through standard phrases

Another way of making text available in a number of documents is through LocoScript's system of Phrases. This option is especially useful if there are a number of quite short phrases that you use in a lot of the documents you prepare. If you store these as Phrases, all you have to do to type each of them is press two keys.

In many respects, Phrases are very similar to Blocks: text is copied into both Phrases and Blocks in essentially the same way and, once stored, the text can be 'pasted' in anywhere you like by pressing the [PASTE] key followed by a character key. In both cases, the character key pressed is the name of the Block or Phrase to be inserted. With Blocks, this is one of the numbers `0...9`: with Phrases, it is one of the letters `A...Z`.

However, there are also some important differences. In particular, any Blocks you set up are forgotten the moment you switch off or reset your machine. Phrases, on the other hand, can be saved together in a file on disc and so you can readily 'reload' a set of Phrases you have used before. You can even have one set of Phrases that is loaded automatically as part of the process of loading the LocoScript 2 program. For this reason, the chances are that you always have some Phrases available.

Another important difference is that you can only store a limited amount of text – about 1000 characters – in any set of Phrases. Each Phrase is meant to be just a few words, whereas you typically store one or more paragraphs in a Block. You can also use Phrases to store special combinations of word-processing codes – for example, a particular combination of Character Pitch, Line Spacing and Character Styling (Bold, etc.) that you use for Subheadings, say. Layout codes, however, are a bit big for storing as Phrases.

Setting up a group of Phrases

1. Looking at the current set of Phrases

The first step is to find out/remind yourself which phrases are available so far. The menu that helps you do this is the Actions menu of either the LocoScript Editor (which you are using now) or the Disc Manager Screen. In either case, the Actions menu is brought onto the screen by pressing [f1]: so press [f1] now.



The option you want here is `Show Phrases`. Select this option and then press [ENTER] to tell LocoScript to carry out this action. What you now see on the screen will be a 'menu' like this:



Down the lefthand edge of this menu are the names of the Phrases and, beside each name, at least the beginning of the text stored as this Phrase – just like the display when you select the `Show Blocks` option. But unlike the Show Blocks menu, this Show Phrases menu only lists the Phrases that are currently being used. If a Phrase isn't shown, then nothing is stored in that Phrase. If a Phrase is shown as blank, then it just holds word-processing codes.

Initially, only the first 12 Phrases you have stored are displayed. To see further down the list, move the Menu cursor down the menu and then keep pressing [↓]. The list will then scroll to show you the other Phrases. To scroll back up through the list, move the Menu cursor up the menu and then keep pressing [↑]. Alternatively, if you want to see a particular Phrase, type the name of the Phrase. LocoScript 2 will then move the Menu cursor directly to this Phrase, adjusting the section of the list that's displayed as necessary. For example, you can readily display Phrase Z by typing `Z`.

2. Clearing out Phrases you no longer need

The Show Phrases menu can also be used to clear out Phrases that you don't need.

For example, suppose that you don't want to keep Phrase Z. All you need to do to clear away this Phrase is to move the Menu cursor to Phrase Z (for example, by typing `Z`) and then press [Ⓒ]. Pressing [Ⓒ] clears the text next to the Phrase name – just as it cleared the slots in the Find and Exchange menus (see Session 14).

Press [ENTER] when you have cleared the Phrases you want, to clear away the menu.

3. Adding new Phrases

To add phrases to your current set, you have to be working on a document that contains examples of the phrases that you want to add to your set. (You can, if you like, just type these phrases in temporarily and get rid of them when you have finished copying them into Phrases.)

Picking out each Phrase is just like marking out a section of text for storage in a Block. You move the Text cursor to the beginning of your chosen phrase and press [COPY]; then move the Text cursor to the end of the phrase and press [COPY] or [CUT] as appropriate. The only difference is that you now type a letter as the name of the Phrase you want to store the phrase in.

So, for example, to pick out `'High-Capacity''Double-track' discs` as a Phrase, you would mark this phrase out exactly as if you were going to store it as a Block, but finishing by typing (say) `H` when you were asked to type a number or a letter.

Choosing which letter to type is the hardest part of the operation. To help you remember later which phrase you want, you should choose a letter that is appropriate to the phrase you are saving – for example the first letter of the phrase. But, at the same time, you must remember which letters you have already used. You don't want to choose a letter that is already being used for another Phrase (unless you no longer want this Phrase).

The new phrase is now added to this set of Phrases – at least until you switch off or reset your machine. To make the phrase a permanent member of the set of Phrases, you have to save the whole set – as we shall describe below.

Note: You can have up to 26 Phrases (Phrase A...Phrase Z) but their total length is limited to about 1000 characters. When you use up all the available space, you will see a message on the screen telling you that you have over-run your phrase store.

When this message appears, you will lose some of the phrase you were setting up. It is a simple enough task to set up the phrase again, but first you must make some space by getting rid of the phrases you no longer want to use.

To get rid of a Phrase (say, Phrase Q), you can either use the Show Phrases menu as before or you can mark out a phrase of nothing by not moving the Text cursor between the two times you press [COPY] and then store this as the new Phrase Q.

Using Phrases

To insert a phrase in the document you are working on, all you have to do is position the Text cursor, press [PASTE] and then type the letter that's the name of the Phrase you want – exactly as if you were inserting a Block (see Session 6). The text stored in the Phrase you name is then inserted into the document at the cursor position. Of course, if you specify a Phrase that's empty, nothing will be inserted.

So, for example, to insert Phrase H (`'High-Capacity''Double-track' discs`) at the beginning of the third paragraph of the example document, position the Text cursor at the start of this paragraph, press [PASTE] and then type H. Phrase H is then inserted:

```
solution to your problem with discs is also to tidy them up. You can work a
lot more efficiently:↵
↵
■ if you use different discs for different types of documents, rather like
you would use the different drawers of a filing cabinet↵
```

[PASTE] H

```
solution to your problem with discs is also to tidy them up. You can work a
lot more efficiently:↵
↵
'High capacity' 'Double track' discs■
 if you use different discs for different types of documents, rather like
```

Obviously, it is important to know which Phrase holds the text you want. If you (or the person who set up the Phrases) chose the letters well, you may well be able to remember pretty much what is stored in each Phrase. However, you can always check by 'looking up' the Phrase in the Show Phrases menu (as above).

• The Phrases available to you remain the same (barring further additions and/or deletions) until either you switch off or reset your machine or you load a different set of Phrases. If you want to use a particular set of Phrases again, you have to save these – as described below. Otherwise, the next time you load LocoScript you will only have your 'old' set of Phrases available.

Saving the current set of Phrases

Once you have finished making your changes to your current Phrases, it is a good idea to save these as a set of Phrases – particularly, if you expect to use this set again.

Saving the current set of Phrases is one of the tasks carried out when the Disc Manager Screen is displayed. This makes it, ideally, a job to do when you are returned to the Disc Manager Screen between editing one document and working on

another. So the next thing to do if you are following the Tutorial is to press [EXIT] to finish work on the current document, and then select `Abandon edit` and press [ENTER] – to throw this document away.

Before you go any further you must decide where you want to store the Phrases, because you need to arrange that the disc you want to store them on is available. This disc must be in the drive before you start saving the set of Phrases because you cannot change the disc in the drive in the middle of the process of saving Phrases.

LocoScript 2 was supplied with a single set of Phrases – stored in a file called `PHRASES.STD` in the `SYSTEM` group of the Start-of-day disc. The name and location (disc and group) for this file are important because these ensure that the Phrases stored in this file are automatically made available as part of the process of loading LocoScript 2. If you want your current set of Phrases to be the ones automatically made available, you must replace the current `PHRASES.STD` file on your Start-of-day disc with your new set.

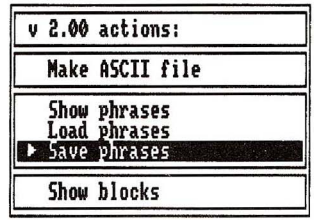
If you just want the set of Phrases to be the ones available while you are working on certain types of documents, then you should save the Phrases in a file certainly on the same disc and preferably in the same group as the documents you want to use it with. In this case, you can either replace an existing file (if you want to update a particular set of Phrases) or store the Phrases in a new file.

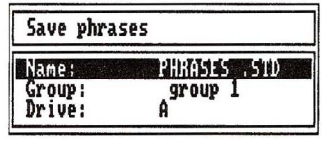
Note: You can also save your Phrases by calling up the Disc Manager Screen from within a document. However, when you do this, you won't be able to remove the disc holding the document you are editing from the drive – so you won't necessarily be able to put the disc on which you want to store the Phrases into your machine at the moment. You may have to save your Phrases temporarily on Drive M instead and then copy the file to the right disc later.

The first step is to pick out the group in which you want to store your Phrases. If you are replacing an existing file of Phrases, move the File cursor to this file. Otherwise, move the Group cursor to the group you want to store the Phrases in.

So, for example, to save the current set of Phrases as a new file in `group 1` (the EXAMPLES group) of your Start-of-day disc, move the Group cursor to this group.

The menu on the Disc Manager Screen that helps you save your current set of Phrases is the Actions menu, which you bring onto the screen by pressing [f1]. The option you want is `Save Phrases`.





Select this option and press [ENTER] in the usual way. When you press [ENTER], LocoScript puts up one of its Selection menus, giving details of the place you have chosen to store your set of Phrases. The Name part of the menu is always PHRASES.STD – LocoScript'a standard name for a Phrases file..

You can give your new Phrases file any name you want – providing, of course, that it is a valid name and that it is not already the name of one of the documents in the same group. However, it is probably a good idea to keep the name PHRASES as the first part of its name – to make it easier for you to remember what is stored in this file. For example, you might call the example set of Phrases `PHRASES.EG`.

When you've checked the details in the Selection menu, press [ENTER] to tell LocoScript to go ahead. When you store the Phrases in a new file, LocoScript simply creates the new file and then returns you to whatever you were doing before. But when you choose to replace an existing file, LocoScript first puts up one of its Alert messages – to warn you that you are about to overwrite an existing file. You confirm that this is what you want to do by pressing [ENTER].

Loading a set of Phrases

As we said earlier, LocoScript automatically loads the Phrases stored in the PHRASES.STD file in the SYSTEM group of your Start-of-day disc as part of the process of loading the LocoScript 2 software. LocoScript makes these Phrases available for you: you don't have to do anything.

When you want to use a different set of Phrases that you have stored on disc, you have to go through a special procedure to load these. Again, this is something that you do from the Disc Manager Screen.

Of course, you can only load a Phrases file that is currently in one of your drives – so it is important to organise this **before** you set about loading this set of Phrases.

To see the loading of Phrases in action, reset your machine (which, you will remember, you do by inserting the Start-of-day disc in Drive A and holding down the [SHIFT] and [EXTRA] keys as you press [EXIT]). This reloads the LocoScript 2 program and the Phrases in the `PHRASES.STD` file in the SYSTEM group on the Start-of-day disc. You can readily check this from the Disc Manager Screen by using the `Show Phrases` option in the Actions menu – exactly as we did earlier (except that then we were using the `Show Phrases` option of the Editor Screen's Actions menu.)

You could now load the Phrases you have just stored the PHRASES.EG file on your Start-of-day disc as follows:

The first step is to make PHRASES.EG available. In this case, the disc you want is already in the drive but often you will need to insert the disc holding your Phrases file and press [f7] to tell LocoScript that you have changed a disc. When the disc you want is in the drive, select the Phrases file – by moving the File cursor until it is over this file.

Now press [f1] to bring the Actions menu onto the screen. The option you want this time is `Load Phrases`. Select this option and press [ENTER] in the usual way.

Again, LocoScript responds with one of its Selection menus. Check that the details given in the menu are right: then press [ENTER] to tell LocoScript to go ahead (or [CAN] to abandon).

LocoScript then 'forgets' the previous set of Phrases and replaces them by your chosen set of Phrases (PHRASES.EG in this case) – as you can readily confirm by inspecting the current set of Phrases with the help of the `Show Phrases` option, just as you did before.

Exchanging text with other programs and word processors

I: Preparing a LocoScript document for use by another program

LocoScript documents contain a number of special codes that specify how the text appears on the screen and how it is printed. These codes are special to LocoScript and can't be used by other programs.

So before you use a LocoScript document with another program, you have to make a copy of the document that has been cleared of all these codes. This is called 'Making an ASCII file' – because an ASCII file is one that only contains text characters.

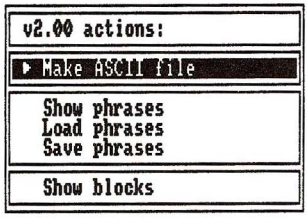
There are two types of ASCII file you can make.

One is called a 'Simple text file'. This has none of the detailed layout information, though it does record where you pressed [TAB] and [RETURN]. A Simple text file is the type of ASCII file you need to make when you simply want to pass information between LocoScript and another program.

The other type of ASCII file is a 'Page image file'. Here, all the spacing, line breaks, page breaks, etc. are preserved by putting in extra spaces, extra carriage returns and special characters called Form Feeds. This is the type of ASCII file to make when you want to preserve the way LocoScript has laid out the document – for example, because you want to 'paste' your LocoScript document into a document prepared on another word processor.

ASCII files are made from the Disc Manager Screen – so you start by displaying this screen. The next step is to ensure that you have the disc(s) you need in the drive(s). You need to have access to both the LocoScript document and to the disc you are going to store the ASCII version on. In our example case, you just want the Start-of-day disc in a disc drive. (Press [f7] if you change the disc.)

When you have the discs etc. set up, pick out the LocoScript document you want to make an ASCII version of with the File cursor in the usual way. For example, pick out `DISCINFO`. Then press [f1] to bring the Actions menu onto the screen.



The option you want here is `Make ASCII file`. This is the top option in the menu and is pre-selected for you, so typically all you have to do is check that `Make ASCII file` is selected and press [ENTER].

Now move the Group cursor to the group you want to store the ASCII version in. (LocoScript displays its usual message telling you to do this.) Always choose the first group on the disc to make it easier for other programs to access the file. If this disc isn't in the drive at the moment, move the Group cursor to one of the groups on Drive M – for temporary storage. Press [ENTER].



A menu then appears giving details of the LocoScript document you picked out and of the ASCII file you propose to make. Down the bottom of the menu is a mini 'Commands' menu with the two options – one for each type of ASCII file.

Check the details of the LocoScript document given in the menu and type a name in the slot provided for the ASCII file – `ASCII.EG` in this case. That done, select the type of ASCII file you want and then press [ENTER] to tell LocoScript to go ahead or press [CAN] to abandon. `Simple text file` is automatically selected for you (as you can see from the arrow beside it), so all you have to do to make a simple text file is press [ENTER].

LocoScript then creates the ASCII version and stores it in the file you specified. Before you use this file, move it to one of the discs you use with your other program – for example, by using LocoScript's own moving and copying facilities ([f3] – see Session 7). Your LocoScript discs are best used only for LocoScript documents.

Note: LocoScript uses a much wider range of characters than many other programs and so your text could appear 'damaged' when you start using it in your non-LocoScript program. In some cases, you can avoid this problem by first running the ASCII file through a special conversion program that prepares the ASCII file for your program. You may need a 'tame expert' to put together such a program for you – but start by asking your dealer if such a program is already available.

II: Inserting text prepared on a different system

Suppose you use an accounts package, for example, and you want to transfer some of the information this has generated to the document `DISCINFO`.

First, you must use the accounts package to produce a file containing the information you want to transfer. This file must contain just standard text characters: it must not contain any special codes that tell the accounts package how to lay out this information. In other words, what you want – once again – is a simple ASCII file. If it is possible to set up such a file from within your program (and it usually is), you will find details of how this is done in the user guide to the accounts package.

This file must be stored on a disc that you can use in your PCW – that is, a 3" compact floppy disc formatted for use under CP/M. (Don't worry if this doesn't mean a lot to you: it will make sense to your dealer or to an experienced computer user.)

If you run your accounts package on your PCW, then you won't have any problems. The file will automatically be stored on the right kind of disc. If the accounts package runs on a different computer, you will have to find a way of making a copy of the ASCII file on a PCW disc – preferably on the disc that also holds the document you want to add this information to. You may need the help of an 'expert' here – your dealer, perhaps.

Once you have the file ready, display LocoScript's Disc Manager Screen. Insert the disc holding the ASCII file and and, if possible, the disc holding the document. (Remember to press [f7] to tell LocoScript about the disc change.) In this case, both the document and the ASCII file are on the Start-of-day disc so you just need to insert this disc.

If the document and the file are on different discs and you have a machine with a single disc drive, insert the disc holding the ASCII file, press [f7] (to tell LocoScript you have changed discs) and then make a copy of this file on Drive M (see Session 7). Then replace the disc with the one holding your document and again press [f7].

Now edit the document in which you want to insert this text (DISCINFO in this case). Once the document is on the screen, move the Text cursor to the place you want to insert the new text – the end of the document, for example.

The menu option you want here is `Insert text` – just as it was when you wanted to insert a whole LocoScript document into another. This, you will remember, is one of the options in the Actions menu – so after you have positioned the Text cursor, press [f1] to bring the Actions menu onto the screen.



Move the Menu cursor to `Insert text` and press [ENTER]. LocoScript 2 then displays the Disc Manager Screen so that you can pick out the file you want to insert.

Pick out the ASCII file you want with the File cursor in the usual way and press [ENTER]. (The message on the screen reminds you to do this.) In this case, the file to pick out is `ASCII.EG` – the ASCII file we have just made. LocoScript then puts up a Selection menu giving the details of the file you picked out. Check these details are right and then press [ENTER].

You now return to the document and LocoScript 2 inserts the ASCII file. This can take a little while, depending on the length of the file you are inserting.

When all the file has been inserted, notice how this text has been cleared of any codes that were in the original LocoScript document. You can go now through putting in word-processor codes to lay it out nicely, exactly as if you had just typed the text in.

Session summary

In this session, you have seen all the ways in which text can be shared between LocoScript documents and between LocoScript documents and other computer programs. In particular, you have seen:

- How to save a block of text from one LocoScript document and insert this in another LocoScript document
- How to insert a whole LocoScript document in another
- What side-effects you can get when you move text containing word processing codes from one place to another and how to cure these
- How to set of a series of short phrases that you can insert in any document just by pressing a couple of keys and how to make these available for use
- How to process a LocoScript document so that it can be used by another program
- How to insert text that has been prepared by some other program, eg. another word processor

Stage III:
Advanced features

Session 16

The Professional touch – I: Niceties of Layout

So far, everything we have done has been geared towards simply producing text printed on a page. The results we have produced have been pretty impressive – involving different styles and sizes of characters, tables, properly justified text, etc. – but really professional text production features:

- total control over Line Breaks – ie. over where one line ends and another begins
- total control over Page Breaks – ie. over where one page ends and another begins
- special pieces of text at the top and/or the bottom of each page (known as Headers and Footers); and
- numbered pages

LocoScript 2 has all these features, and in this session and the next we show you how to use them.

In this session, we show how you can control Line Breaks and Page Breaks. The document we are going to edit is called `SPELL.TXT` and it is stored in `group 1` (the EXAMPLES group) of your Start-of-day disc. So, the first step is to open this document for editing.

Controlling Line Breaks

LocoScript normally fits as many words as it can on each line before moving onto the next line. Where it breaks the line is at the last possible space or hyphen.

This gives good results most of the time but not all of the time.

- If you are using very short lines (or double-spaced characters) or relatively long words, you can have lines where the space at the end of the line or the spacing between the words is so large that it looks ugly.
- Exactly the same problem arises where you have a list of options – like `French/German/Spanish` – with no spaces in it, so that it looks like one long word to LocoScript.
- Where you have someone's name, you could have their initials on one line and their surname on another, or even the initials split across the break between two lines.
- You won't want a line break to happen at every hyphen – for example, you won't necessarily want one at the hyphen in `add-on` when you are describing, say, add-ons for your computer such as an extra disc drive.

It's possible to cure most of these problems simply by putting in extra hyphens and spaces. For example, a simple way of filling up a gap at the end of one line is to put a hyphen at a suitable point in the next word (the first word on the next line) because then LocoScript will move onto the next line at this hyphen, rather than at the start of the word.

But there is a problem with this simple solution: the moment you make even a small change to the paragraph, these extra characters will probably be in the wrong places and you will have to rub them out again.

LocoScript has some very much better solutions.

'Soft' hyphens and spaces

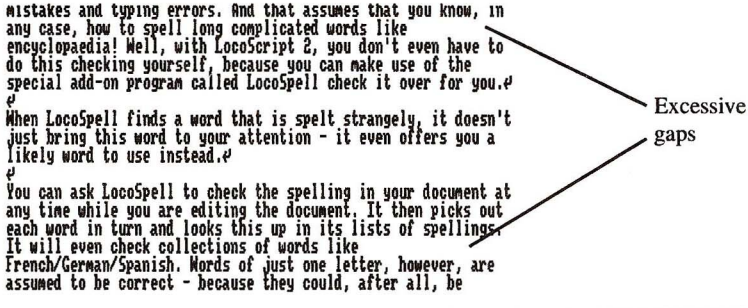
LocoScript's Soft hyphens and spaces solve the problem of short lines or lines that are too widely spaced – without giving you any extra hyphens or spaces to get rid of later when other changes are made.

The special feature of Soft hyphens and spaces is that they only become visible when LocoScript breaks the line at the soft character. The rest of the time, you wouldn't know they were there!

When the reason for the problem is that the next word is relatively long, the solution is to put a Soft hyphen at a point in the word where you would be happy to see the word divided.

There is a good example of this in the first paragraph of the example document, where the automatic layout has left a large gap at the end of the third line because there isn't enough room for the word `encyclopaedia`. The paragraph would look very much better with `encyclo-` at the end of the third and `paedia` at the beginning of the fourth line. So what you need is a Soft hyphen after the `o`.

Where the item you want to divide is a list of options like `French/German/Spanish`, the sort of split you want is `French/German` on the end of one line and `Spanish` at the beginning of the next line. (This actual example appears in the second paragraph.) In this case, you don't want a hyphen at the end of the line, so the special character to put in after the slash is a Soft space.



Inserting Soft hyphens and spaces

Soft spaces and hyphens are inserted into a document through sequences of keystrokes very like the ones we have used already to put in word-processing codes like `(-Bold)` and `(-UL)`. The keystroking for a soft space is to press [□] followed by the Space bar; the keystroking for a soft hyphen is to press [□] and **then** type a hyphen.

So to let LocoScript split `encyclopaedia` between the `o` and the `p`, position the Text cursor and then press [□] and type a hyphen. The moment you type the hyphen, LocoScript not only puts in the character but relays the paragraph up to where you are working to take account of the Soft hyphen you have inserted.

```
For many people, a large part of preparing a document is that
most tedious of jobs - checking it over and over for spelling
mistakes and typing errors. And that assumes that you know, in
any case, how to spell long complicated words like encyclo-
      paedia! Well, with LocoScript 2, you don't even have to
do this checking yourself, because you can make use of the
special add-on program called LocoSpell check it over for you.↵
↵
When LocoSpell finds a word that is spelt strangely, it doesn't
just bring this word to your attention - it even offers you a
likely word to use instead.↵
```

Similarly, to split `French/German/Spanish` after the second slash, position the Text cursor and then press [□] followed by the Space Bar. Once again, you will see LocoScript relay the text to take account of this change.

```
You can ask LocoSpell to check the spelling in your document at
any time while you are editing the document. It then picks out
each word in turn and looks this up in its lists of spellings.
It will even check collections of words like French/German/-
              Spanish. Words of just one letter, however, are
assumed to be correct - because they could, after all, be
someone's initials. It would be annoying for LocoSpell to pick
out the B in A B Smith as a spelling mistake!↵
↵
```

To see that these characters really do disappear when they are not needed, move the Text cursor to the beginning of the word `'words'` in the first paragraph and delete the word `complicated` ; then press [RELAY]. When the paragraph is relaid, there is no longer any need to split the word `encyclopaedia` and, sure enough, the hyphen disappears.

But if you use the Options menu ([f8]) to display word-processing codes, you will see that the hyphen is still there – shown now as `(-)`. The Soft space you inserted is now shown as `(␣)`. If the text is changed in the future, LocoScript could use the Soft characters again: you won't need to type these characters in at the same places again.

'Hard' hyphens and spaces

LocoScript's Hard hyphens and spaces solve the problem of line breaks in the middle of someone's initials or at a place you don't like in hyphenated words.

The special feature of Hard hyphens and spaces is that LocoScript will never break the line at the Hard character. So to ensure that someone's name (initials and surname) isn't split between two lines, replace the spaces in the name by Hard spaces. Similarly, you stop a line breaking at a particular hyphen by replacing the hyphen by a Hard hyphen.

If you look at the first couple paragraphs of the example document, you will see two places where these Hard characters should be used. The name `A B Smith` is split after the `B` and `add-on` is split at the hyphen.

Inserting Hard hyphens and spaces

Hard spaces and hyphens are also inserted into a document through sequences of keystrokes – and the keystroking is very similar to that used for the soft characters. The only difference is that the keystroking starts with [⊞] rather than [⊡].

So to re-unite Mr Smith's initials with his surname, delete the space after the `B` and replace it by a hard space by pressing [⊞] followed by the Space Bar.

Press [RELAY] to see the effect of the Hard character you have inserted.

```
It would be annoying for LocoSpell to pick out the B in A
B Smith as a spelling mistake!
```

Unfortunately, just putting a Hard space between the `B` and the `Smith` hasn't fully solved the problem – because now the line break is after the `A`. You also need another Hard space between the `A` and the `B`.

```
It would be annoying for LocoSpell to pick out the B in
A ⊠ Smith as a spelling mistake!
```

The problem with the word `add-on` is solved in a similar way. You just have to delete the standard hyphen and then replace it with a hard hyphen by pressing [⊞] and typing a hyphen. Immediately LocoScript relays the paragraph up to where you are working to take account of this change.

• As we pointed out above, the keystroking for these special characters is essentially the same as that for word-processing codes. So you can call up the corresponding Set or Clear menu when you can't remember the keystroking for one of these characters – just as you can when you can't remember the keystroking for a particular code. (See Session 10.)

Controlling Page Breaks

The simplest way LocoScript works out where one page should end and the next begin is by doing a simple line count: once you have a certain number of lines of text on a page, it is time to move onto the next one.

But such a simple way of working out where the page breaks should be means you can find yourself with:

- one line of a paragraph on a different page from the rest of the paragraph – the so-called widows and orphans that professional typesetters will go to great lengths to avoid
- page breaks in the middle of paragraphs – when many people prefer page breaks to be between paragraphs
- part of a table on one page and the rest on the next, when it is much better to have a complete table on one page

You can 'cure' most of these problems by putting in strategic blank lines – but this cure suffers from the same sort of problems as putting in extra spaces and hyphens to cure your problems with line breaks. When you come to make a change, these extra lines will be in the wrong place and you will have to rub them out and start all over again.

Another time that you will need to control where a new page starts is when you want to leave space for a picture at the top of a page. You can't do this simply by typing lots of blank lines – because LocoScript will simply treat these lines as spare blank lines from the bottom of the previous page and promptly 'swallows' them. LocoScript always swallows any spare blank lines at the bottom of a page to ensure you have text on the first line of the next page – because, most of the time, this is what you want.

LocoScript has better solutions to these problems as well.

Keeping lines together

The problems of paragraphs and tables being split across a page break are solved by telling LocoScript to keep the lines of the paragraph or the table together.

Furthermore, LocoScript has some special ways of preventing page breaks in the middle of paragraphs which we describe in Session 18. (In fact, all the documents you have been working with so far have been set up to prevent Widows and Orphans – the single line of a paragraph on a different page – so you don't have to do anything to guard against this particular problem.)

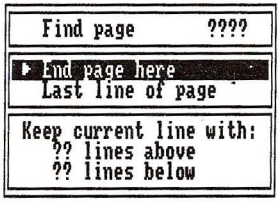
What we look at here is how to pick out a group of lines, such as the lines of a table, and tell LocoScript to keep these together. This keeps any group of lines together, whether these are within a paragraph, span a couple of paragraphs or cover a number of paragraphs.

The key to keeping lines together are some special word-processing codes known as Keep codes which tell LocoScript to Keep a certain number of lines together. Once again, LocoScript gives you a choice of ways of putting these codes into a document – through the Page menu or by keystroking. We shall now show you how to use both of these methods.

(i) Using the Page menu

Suppose you want to ensure that the last paragraph of page 1 and first paragraph of page 2 of the example document are always on the same page.

As you might expect, the first job is to position the Text cursor. It is a good idea to position the Text cursor either on the first line of the group or on the last line – so move it to the first line of the last paragraph of page 1. When the Text cursor is in position, bring the Page menu onto the screen. If you look at the Information lines at the top of the screen, you will see that the key to press is [f5]. Do this now.



The part of this menu you need here is the bottom section, which asks you to specify the number of lines to be kept together with the current line (ie. the line with the Text cursor on it). When the Text cursor is on the first line of your chosen group, you need to tell LocoScript how many lines below the current line to keep with this line; when the Text cursor is on the last line of the group, you need to tell LocoScript how many lines above the current line to keep with the current line.

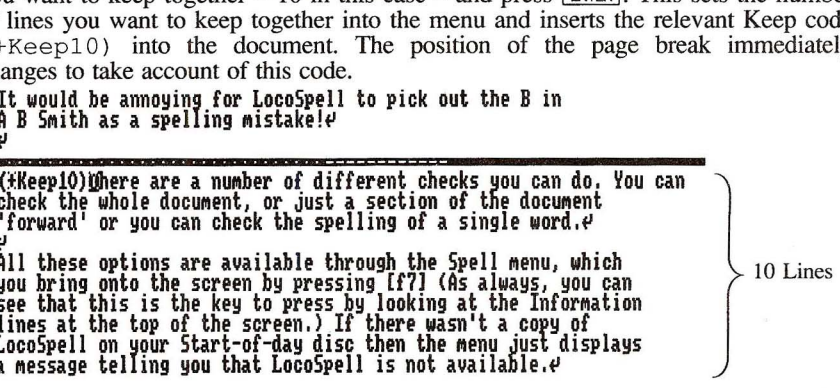
Both options work like, say, the `Find Page ??` option in the Page menu. You select the option you want with the Menu cursor (it's a Commands menu, so the arrow automatically moves as well), type in the number you want and press [ENTER] to go ahead.

The number you want is the total number of text lines you want to keep above or below the current line – including the current line itself.

```
There are a number of different checks you can do. You can
check the whole document, or just a section of the document
'forward' or you can check the spelling of a single word.↵
↵
All these options are available through the Spell menu, which
you bring onto the screen by pressing [f7] (As always, you can
see that this is the key to press by looking at the Information
lines at the top of the screen.) If there wasn't a copy of
LocoSpell on your Start-of-day disc then the menu just displays
a message telling you that LocoSpell is not available.↵
```

10 lines of text

As the Text cursor is on the first line of the group, the option to select is `?? lines below`. Move the Menu cursor to this option, type the number of lines you want to keep together – 10 in this case – and press [ENTER]. This sets the number of lines you want to keep together into the menu and inserts the relevant Keep code `(+Keep10)` into the document. The position of the page break immediately changes to take account of this code.



• If you positioned the Text cursor on the last line of the group, the code you need is `(-Keep10)` and the option you will want is `?? lines above` – but otherwise the steps are exactly the same, including the total number of lines to keep together.

Note: It's a good idea to put Keep codes on both the first and the last lines of any table you expect to be adding to. Providing you don't more than double the number of lines in the table, these codes will ensure that the whole table is kept on one page – without you having to change the codes.

(ii) Using keystrokes

To demonstrate the keystroking needed to put in the Keep codes, we shall now go through a similar exercise to tell LocoScript to keep the second, third and fourth paragraphs together.

As usual with keystroking, the first key to press depends on whether the code you want to insert starts with a + or a –. When you want to tell LocoScript to keep the current line with the lines below it, the code you need is `(+Keepn)` and so the first key to press is [+]. If you want to keep the current line with lines above it, the code you want is `(-Keepn)` and the first key to press is [-]. After that, type `K` followed by the total number of lines and press [ENTER] (because of the number) – or wait until the corresponding Set or Clear menu appears on the screen.

As before, the first step is to position the Text cursor – say, on the top line of the paragraph.

This time you want to keep 16 lines of text together, making the code you want `(+Keep16)` – so press [+], type `K16` and finally press [ENTER]. LocoScript immediately relays the document and changes the Page Break to take account of this code.

That's all there is to it. What is more, inserting a `(-Keepn)` code takes very much the same steps – except that you start by pressing [-]. For practice, try using these keystrokes to insert a `(-Keep3)` code on the top line of the second page so that this line is kept together with the last two lines on the previous page.

Putting in page breaks of your own

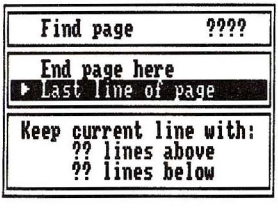
The key to leaving a gap for a picture at the top of a page (or at the bottom) is to tell LocoScript precisely where you want it to move from one page to the next by inserting some special codes. These special codes tell LocoScript to 'end the page here' or that a particular line is the 'last line of the page'. Blank lines following one of these codes are not 'swallowed' and so can be used to leave the space you need for the picture.

Once again, LocoScript gives you two possible ways of putting in these special codes – through a menu (the Page menu) or by keystroking. The codes override any Keep codes that you have put in, so you don't need to change your 'old' Keep codes to match.

(i) Using the Page menu

Suppose you wanted to leave a gap after the third paragraph of the current document and start the fourth paragraph on a new page.

One way of achieving this is to mark the last line of the third paragraph as the last line of a page. To do this, move the Text cursor to the last line of this paragraph – any position on this line will do – and then press [f5] to bring the Page menu onto the screen. This time the option you want is `Last Line of page`.



Select this option and press [ENTER] in the usual way. (The Page menu is a 'Commands' menu – with the selected option picked out by the arrow.) LocoScript then inserts a `(LastLine)` code, telling Locoscript that this must be the last line on the page. It also puts the End-of-page line immediately below the line you have marked as the last line of the page.

```
It would be annoying for LocoSpell to pick out the B in
A B Smith (LastLine)as a spelling mistake!↵
- - - -
```

The other way of leaving a gap after the third paragraph is to tell LocoScript to end the page immediately at the end of the paragraph. That is done by a special character rather like the ↵ character that tells LocoScript where to end one line and go onto the next. The character is known as a Form Feed and it is represented on the screen by ↧. Like ↵, ↧ is only ever displayed on the screen: it is never printed.

The option of the Page menu that puts a Form feed in for you is `End Page here`. To see this in action, move the Text cursor just in front of the ↵ at the end of the third paragraph, pull down the Page menu and select `End Page here`.

Notice how this time after you press [ENTER], you have two blank lines at the top of the next page – both of which you will want to get rid of. The Form Feed character makes the Carriage Return at the end of the line redundant. It also makes the `(LastLine)` code redundant – as you can see by rubbing out this code: once you have a Form Feed character at the end of the line, the page break is where you want it whether a `(LastLine)` code is present or not.

```
It would be annoying for LocoSpell to pick out the B in
A B Smith as a spelling mistake!↧
─────────────────────────────────────────────────────────
↵
↵
There are a number of different checks you can do. You can
check the whole document, or just a section of the document
```

(ii) Using keystrokes

You can insert both `(LastLine)` codes and Form Feed characters simply by using keystrokes.

- To put in a `(LastLine)` code, press [⊞] and then type `LL`
- To put in a Form Feed character, hold down the [ALT] key and keep it down while pressing [RETURN]. (Think of a Form Feed as being a 'Super' Carriage return.)

Suppose, for example, that you wanted to end the second page after the last line of the third paragraph. You could do this by placing the Text cursor somewhere on the last line of the third paragraph, pressing [⊞] and typing `LL`. That would give you a `(LastLine)` code on this line. Alternatively, you could move the Text cursor to the very end of the paragraph, hold down [ALT] and press [RETURN] to put in a Form Feed character.

Try these out both with Codes displayed and without.

Finally...

Finally, abandon editing this document. Then you can come back and work through this session again as if for the first time, whenever you want to check up on how to control Page Breaks and Line Breaks.

Session summary

In this session, you have seen:

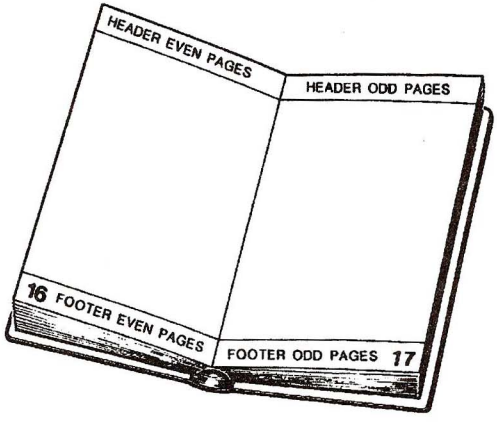
- How to use Soft hyphens and Soft spaces to encourage a line break at a particular place
- How to use Hard hyphens and Hard spaces to stop line breaks at particular places
- How to tell LocoScript to keep a group of lines together on the same page
- How to tell LocoScript to move on to the next page at a particular point in your document

Session 17

The Professional touch – II: Headers, Footers and Page numbers

Headers and Footers – that is, special pieces of text at the top and bottom of every page – make documents very smart indeed. All professionally-produced books have Headers and Footers and so do magazines, if for no other reason than they are the best way of putting in page numbers. They can also be used to produce the effect of company headed notepaper on blank sheets of paper.

In this session, we show you how to set up the text for your Headers and Footers, including how to put in a slot for page numbers that LocoScript will fill in automatically for you. We also show you how to manipulate Headers and Footers so that you produce a special first or last page – or different odd-numbered and even-numbered pages so that you get the effect of left and right pages in a book.



The document we are going to use to show this is `PCWINFO1`, which you will remember is stored in `group 1` (the EXAMPLES group) of your Start-of-day disc. So the first thing to do is to open this document for editing.

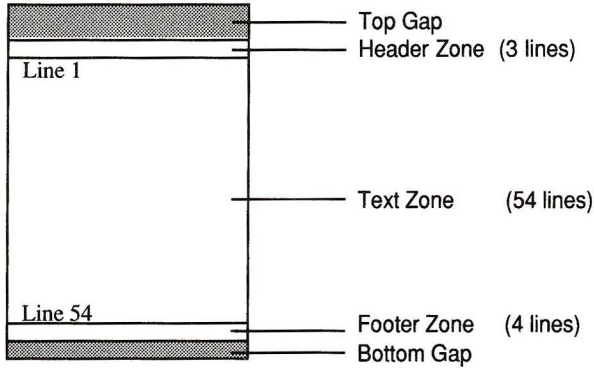
Where do Headers and Footers go?

To cope with a Header at the top of the page and a Footer at the bottom, each page you print has to have three separate areas:

- a top area reserved for a Header – the Header Zone;
- a bottom area reserved for a Footer – the Footer Zone; and
- a middle area that is used for your document – the Text Zone.

As so far we have only been printing out the document itself each time, you probably think that we now have to take some special steps to create Header and Footer Zones – but in fact, this is something else that LocoScript has already set up for you. Indeed, as far as LocoScript is concerned you have printed everything so far with a Header that was blank and a Footer that was blank.

How big these three zones are is something that you can set. (We show you how to do this in the next session.) The example document has 3 lines reserved for a Header and 4 lines reserved for a Footer – leaving 54 lines on each page for your text. (**Note:** The lines referred to here are not actual lines of text but a way of measuring depths on the page. Each line is ⅙", so the depth of the Header zone here is 3/6" = ½".)



As you can see from this diagram, your page isn't simply divided into these three zones. There is also something called the Top Gap at the top of the page and a Bottom Gap at the bottom of the page.

When you use single-sheet paper, you need these two Gaps to mark the areas of the paper at the very top of the page and at the very bottom where your printer should not attempt to print – because the paper wouldn't be held properly by the printer mechanism. When you are using continuous stationery, the Gaps provide a very convenient way of ensuring (once the paper is properly adjusted) that you won't print

on the row of perforations that divide one page from another or on the backing paper between different labels.

We will be telling you more about Top and Bottom Gaps when we tell you about setting everything up for using different sizes of paper (Session 20).

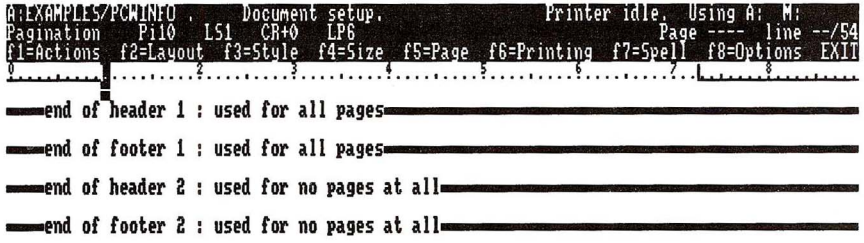
Setting the Header and Footer text

Just having areas of the page reserved for a Header and a Footer is not enough. You also have to set up the text that you want to use for the Headers and Footers. This is sometimes called the Pagination text. The Header text we are going to set for the example document is `General information about the PCW`; and the Footer text is `Session 17 Exercise`.

The Header and Footer text are part of the Document Set-up – the fundamental set-up of your document – and so, to set them, you have to change the Document Set-up. This is done through the `Document Setup` option of the Actions menu. As you will remember (or confirm by looking at the Information lines), you bring the Actions menu onto the screen by pressing [f1]. Do this now.



Select `Document Setup` and press [ENTER]. This gives you a special screen – the Pagination Screen – set up ready for you to type in the Header and Footer text.



This screen is divided into four sections because LocoScript allows you to have two sets of Pagination text. When you want the same Header and Footer on every page, you only need one set of Pagination text; but you will need two sets when you want different Headers and/or Footers on the left and right pages of a book – or when you want something special on the first or the last page.

But that's jumping ahead to something we will cover later in this session. For now, we are only interested in setting up Pagination text that will be used on every page – ie. in setting up text in the top two sections of this special screen.

The first job is to type in the Header text – `General information about the PCW`. The slot for this is the top section of the Pagination Screen – as you will see from the legend on the line dividing this section of the screen from the next. The Text cursor is already at the beginning of this section – so to type in the Header text, just type. This text will be printed on the top line of the Header Zone. (If you don't want the text on the top line of the Header zone, start your Header text with one or two blank lines.)

As we said above, Headers and Footers are usually simple one-line pieces of text like this, but there's nothing to stop you having multi-line Headers and Footers if you want. The only limit is the size of the Header and Footer Zones: if you type more lines in the Header than there is room for, you will push the main document text out of position, possibly pushing the Footer over onto the next page. (The Header Zone in the example document can, in fact, accommodate up to three lines of Header text. We show you how to set the zone sizes in the next session.)

Now use the [↓] key to move the Text cursor into the next section of the screen – ready to type the Footer text. You can't move to the next part of the screen by pressing [RETURN] because this just adds blank lines to the end of the Header text.

Footers are a bit more complicated than Headers because the Footer Zone starts **immediately below the last line of the document text**. Typically, you will want to leave at least one line between the document text and the Footer – which means that you must remember to start your Footer text with blank lines (one blank line for every line space you want to leave).

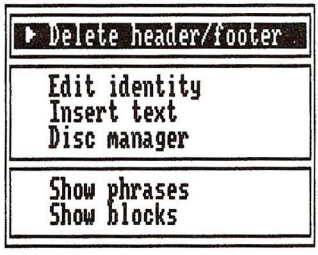
So to give your documents a Footer of `Session 17 Exercise` on every page, separated from the document text by one blank line, type [RETURN] (to put in the blank line) and then type the Footer text.

You could now embellish this text in exactly the same way you can embellish individual words and phrases in the main part of the document. For example, you could make the whole of the Footer text bold by moving to the start of the line, pressing [⊞] and then typing `B`. (As you will remember, this set of keystrokes puts in a `(+Bold)` code.) Or you could put in the same code by using the Style menu. Both the Style menu and the Size menu are available here and work exactly as described in Sessions 10 and 11. There is also a Layout menu with much the same options as before (centring, right alignment, changing the layout – see Session 12) but this time you only have one layout to use, a special Pagination Text Layout.

Moreover, you don't have to worry about turning off any special styles you use at the end of your group of Headers and Footers. Each Header or Footer is treated like a separate document and styles turned on for the Headers and Footers and those turned on in the document itself are totally independent. You don't even need to put in a Carriage Return at the end of the Header or Footer text.

To move back to the Header text and embellish that, just press [↑] to move the cursor up the screen. **Note**: There's no way of abandoning changes you make to the Document Set-up, so it's important to get everything straight before you return to the Document.

Note: If you want to clear away all the Header and Footer text that is set so far, you can do this through the 'Document Set-up' Actions menu – ie. the Actions menu that is available while your computer is displaying the Pagination Screen. Simply select the first option of this Actions menu, press [ENTER] to tell LocoScript to carry out this action and the current Pagination text will be cleared away.



When the Header and Footer text are as you want them, press [EXIT]. LocoScript then puts up a short menu:



Both of these options put into force the changes you have made and return you to the document. The only difference is whether you return to the beginning of the document or to the place you were working before you changed the Document Set-up.

Once you have returned to the Document, you can continue to make changes to the document itself. The Header and Footer won't be visible as you work on the document: they only appear at the top and bottom of each page when you print it out.

• Press [EXIT] and select `Save and Print` to see this Header and Footer in action.

Then edit `PCWINFO` again – ready for the next refinement to the text.

Putting in page numbers

Something that you will often want to include in either your Header or your Footer is the current page number – so that each page you print has its page number on it. You might also want to include the total number of pages – so that you can give your pages labels like `Page 3 of 5`.

At the point you want to put the current page number or the last page number, you have to:

- put in a special code, and
- immediately follow the code with some special markers that mark out the space on the page you want the page number to occupy.

Without the special markers reserving room for the page number, no page number can be printed.

Note: Headers and Footers are the usual places to put page numbers but you can equally well put them into the main part of your document – by using the same keystroking that we describe here.

Just the current page number

A common style of page numbering is - 1 -, - 2 - etc. centred at the bottom of every page. To achieve this, you need a Footer text that tells LocoScript to print at the bottom of each page the number of that page neatly centred between two hyphens and the whole neatly centred on the page.

The first thing to do is to bring the Pagination text onto the screen. As you will remember from earlier in this session, you do this by bringing the Actions menu onto the screen and selecting `Document Setup`. The Pagination text that you set up earlier will now be displayed on the screen.

What we now want is the current page number centred between the hyphens, and centred in the middle of the Footer line – so the next step is to get rid of the existing Footer text. Move the cursor to second section of the Pagination Screen and delete the current Footer text – either by using the Delete keys or by marking it out as a Block and cutting it out, just as if it were text in the main part of the document. Leave the initial blank line, though – you will need that to separate the page numbers from the document text.

The page numbering we want looks more complicated than it is. The combination of word-processing codes and text you need to produce this style of numbering is just:

`(CEntre)-(PageNo)`*(some-special-characters)*-

The code that tells LocoScript to insert the current page number

The characters that mark out the space reserved for the page number

The hyphens are just straightforward characters that you type, and the `(CEntre)` code should be very familiar by now. The only complicated things are the `(PageNo)` code and the special characters.

The `(PageNo)` code is entered by typing a particular key sequence. This sequence is ⊞ (as the code doesn't start with a –) followed by `PN`. (As always, you can just press ⊞ and then wait until the associated Set menu to appear on the screen if you are not sure of the letters to type.)

LocoScript can only print the page number if some space has been reserved for it. To reserve space you must type a <, a > or an = for each character position you want to set aside for the page number – and you must set aside at least enough space for the largest page number you are going to use. If the biggest page number is `100`, you must reserve at least three character positions – or you will lose part of the number. To reserve three character positions for the page number, you must follow the `(PageNo)` code with either <<< or >>> or ===. These are the special characters we referred to earlier.

Which of the three options you type depends on how you want the page number positioned within the space:

- type <<< if the number is to be positioned to the left
- type >>> if the number is to be positioned to the right
- type === if the number is to be centred

Page numbers like - 1 - have the number centred in the space; so type === *right up against the* (PageNo) *code* to reserve three character positions for the number.

Using the information we have told you here, try typing in the word-processing codes and text needed to give this style of page numbers. The finished Footer text should look like this:

With codes

```
(CEntre)          -(PageNo)===-
```

Without codes

```
                  -===-
```

Including the Total number of pages

Another common requirement is for `Page` *n* `of` *m*, say at the end of each Header. (*n* represents the current page number and *m* the total number of pages – ie. the number of the last page). This time the sequence of text and word-processing codes we want might be:

```
(RAlign)Page (PageNo)>> of (LPageNo)>>
```

The code that tells LocoScript to insert the last page number

The characters that mark out the space reserved for the page number

Again most of this is straightforward. The words `Page` and `of` are simple text, the `(RAlign)` should be very familiar, and the `(PageNo)` code and the >> characters are the ones we've just met. (The two > characters mark out two spaces and tell LocoScript to position the number over to the right in this space.) The `(LPageNo)` code, like the `(PageNo)` code, is also entered by typing a particular key sequence. This time the sequence is [⊞] followed by `LPN`.

Try editing your existing Header text to give you this style of page numbering. The finished Header text should look like this:

With codes

```
..... (RAlign)          Page (PageNo)>> of (LPageNo)>>
```

Without codes

```
.....                                   Page >> of >>
```

When you have these codes in your Header and Footer, return to the document as before. 'Save and Print' the document to see these page numbers in action – then open the document for editing again, ready for the next stage of this tutorial.

Lefthand and righthand pages

When you prepare something like a chapter of a book, you want odd-numbered pages laid out as righthand pages and even-numbered pages laid out as lefthand pages.

Much of the difference between right- and lefthand pages is in the Headers and Footers for the two types of pages. A lefthand page will have the Header and the Page number to the left of the page; a righthand page will have the Header and the Page number to the right of the page.

There are two phases to setting up the Headers and Footers

- setting up the Header and Footer text and the layout used for these; and
- telling LocoScript that you want to have one set of Pagination text for lefthand pages and another for righthand pages

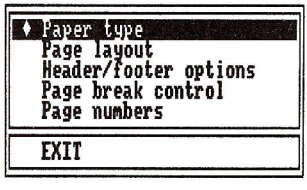
The first phase of this is simply what we have been doing already this session. The only difference is that this time we need to set up two Headers and two Footers.

For the purposes of this tutorial, set up whatever Pagination text you like. Use all of LocoScript's positioning features – centring, right alignment, tabs etc. – to get the pieces of Header and Footer text in the right positions.

Setting how the Pagination text is used

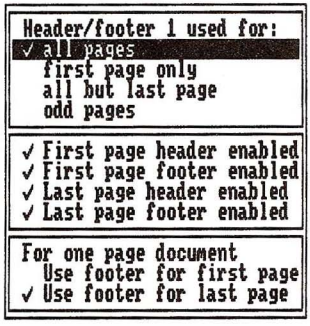
How the Pagination text is used – ie. which pages a particular pair of Header and Footer appear on – is another aspect of the Document Set-up. So again, the route to setting this starts with selecting the `Document Setup` option in the Editor Actions menu to display the special Pagination Screen. Do this now.

Once the Pagination text is displayed, the menu option you require is `Header/Footer Options` in the Page menu. Looking at the Information lines at the top of the Pagination Screen, you will see that this menu is brought onto the screen by pressing [f5]. Press [f5] now; the following menu should be displayed:



This Page menu is totally different from the 'Editor' Page menu that we used earlier in this tutorial to move directly to a particular page and to control page breaks. We shall be looking at the other options in this menu in later sessions of this tutorial, but for now we will just concentrate on `Header/Footer Options`.

Select Header/Footer Options in the usual way and press [ENTER]. LocoScript then immediately puts up a 'follow-on' menu of options – all to do with the different ways in which the Headers and Footers can be applied.



This menu is a 'Settings' menu – which, you will remember, means that you select the options you require by pointing at them with the Menu cursor and pressing [⊞]. The other feature of these menus to note is that setting an option will automatically clear any option that is incompatible with it. You will see this effect at work in this menu because you can only have one choice for how Header and Footer 1 are used.

As you can see, there are three sections to this menu – each of which you need to consider if you are going to get the results you require. The most important to get right is the setting you make in the top section of the menu because this sets the general rules for how the Headers and Footers are applied.

Setting for Left- and Right-hand pages

When you want separate Headers and Footers for lefthand and righthand pages, the first option to select is odd pages. This says that the first pair of Header and Footer texts are used for odd-numbered (righthand) pages. This automatically means that the second pair of Header and Footer texts are used for even-numbered (lefthand) pages.

Move the Menu cursor to odd pages and press [⊞]. Notice how the tick immediately moves from the current setting (all pages) to odd pages.

For the moment, leave the other settings as they are. Just press [ENTER] to tell LocoScript to confirm your choice of odd pages and then return to the document by pressing [EXIT], selecting from this Exit menu that appears and pressing [ENTER] – just as we did earlier in this session. Again, 'Save and Print' the document to see what effect specifying different Headers and Footers for odd- and even- numbered pages has had.

Special Headers and Footers for the beginning or the end of a document

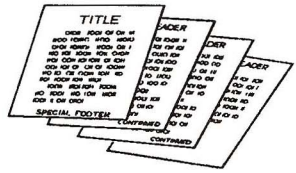
There will be a number of occasions when you will want to treat the first and last pages of your document specially. For example, if you have a main heading on the first page, you probably won't want a Header there as well – even though you will want a Header on every other page. Similarly, you may want continues... at the bottom of every page – except the last.

LocoScript has two features to help here:

- The option of using one of your two pairs of Header and Footer text specifically for either the first page or for the last page. (All the rest of the pages would then use the other set of Pagination text.)
- Independent selection of whether to have a Header and/or a Footer on the first page and on the last page, regardless of how Headers and Footers are used in the rest of the document. So if you didn't want a Header on the first page, you needn't have one.

Suppose for example you wanted:

- 1st page: No Header; Special footer
- Middle pages: Header and Footer
- Last page: Header; No Footer



Analysing these requirements, you see that you want the same Header text everywhere (except for the first page where you have no Header) but you want two different Footers – one for the first page and the other for all the rest of the pages (except for the last which won't have any Footer).

The overall rule – for setting in the top section of the Header/Footer menu – is therefore one Header and Footer pair for the first page and the other pair for all the other pages. In other words, the option you require is `first page only`. (Header/Footer 1 used on only the first page means that Header/Footer 2 are used for every page except the first.)

To arrange that there is no Header on the first page and no Footer on the last page, you need to set options in the middle part of the menu.

There are four options in this part of the menu, each of which is 'true' when it is set (ticked) and 'false' when it is clear (no tick). So, for example, when `First page Footer enabled` is ticked, LocoScript will put the relevant Footer at the bottom of the first page but when this option is clear, no Footer will be printed at the bottom of this page.

What we want here is:

- No Header on the first page – ie. `First page Header enabled` clear
- A Footer on the first page – ie `First page Footer enabled` set
- A Header on the last page – ie. `Last page Header enabled` set
- No Footer on the last page – ie. `Last page Footer enabled` clear

Once again, set this up and press ENTER to confirm this combination. Then return to the document and 'Save and Print' to see the effect this has had.

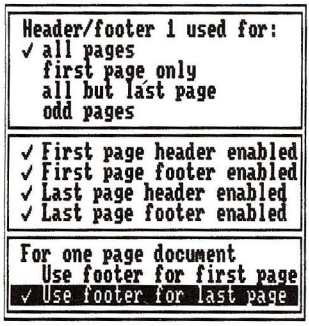
The special case of One-page documents

As a footnote to this session, we shall stop for a moment and think about the Footer a single-page document should have.

The problem is that you will generally set up your documents expecting the beginning and the end of the document to be on different pages. However, a one-page document has both the beginning and the end of the document on the same page. It is pretty obvious that you will want the first page's Header at the top of this page – but whether you should have the Footer from the first page or the one from the last page at the bottom of the page, depends on the details of your document.

So LocoScript 2 leaves the choice up to you – and you make your selection through the last part of the same Header/Footer Options menu that we have been using to make all the other choices about how Headers and Footers are to be applied.

All this part of the menu does is ask you whether you would like the bottom of the one page document to be like the bottom of the first page or the bottom of the last page. If, say, you had a special Footer on the first page that listed all the Directors of the company – then you will probably want this as the Footer on one-page documents as well. In this case, the option to select is `Use footer for First page`. However, if you have the Footer `continues...` on all pages except the last, you will want `Use footer for Last page`.



To select the option you want, just point to it with the Menu cursor and press [⊞] – in exactly the same way as you select any other options in the Header/Footer Options menu.

Session summary

In this session you have seen:

- How to set up Headers and Footers – that is, special text that is printed at the top and the bottom of every page of your document.
- How to give the pages of your document page numbers of various styles
- How to set up your document so that you produce lefthand pages and righthand pages
- How to set up special Headers and Footers for the first or the last page
- How to leave off the Headers or Footers from the first and last pages
- What the options are for Headers and Footers on a single-page document

Session 18

Changing the framework

In all the work we have done so far, you have been working within a framework that was set up for you – a framework that specified:

- which printer and paper you should use
- what the general rules were about laying the text out on the page

LocoScript set up this framework to save you the bother of making a number of complex settings before you could start doing any work. And as you know, the rules it set haven't got in the way of what you wanted to do. In fact, probably the only rule you have been aware of so far is that you have had to print everything on A4 paper.

The settings that make the rules are all part of the Document Set-up which we started changing in the last session. In this session, we are going to change some more of the framework to suit the documents you produce, specifically:

- how the page is divided up into a Header zone, Footer Zone and Text zone
- what your set of Stock Layouts are
- what the general rules about page breaks in the middle of paragraphs are
- what the number of the first page is

We will be seeing how to specify the paper and the printer your document is set up for in Sessions 20 and 23.

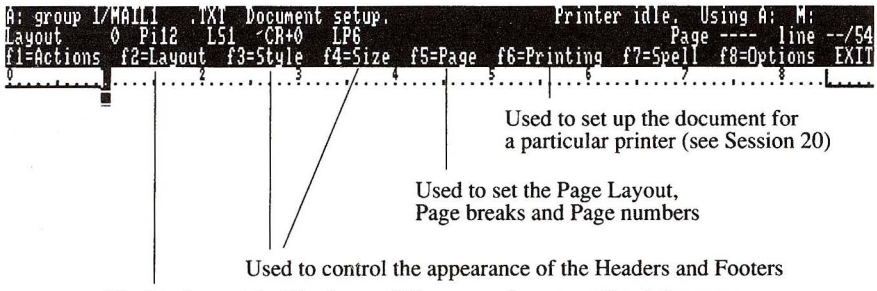
The document we are going to work on in this session is `MAIL1.TXT`, which is stored in `group 1` (the EXAMPLES group) of your Start-of-day disc. So to start, open this document for editing.

Note: Any changes you make to the Document Set-up must always be carefully thought out in advance because they affect the whole document.

Gaining access to the Document Set-up

The initial steps in changing the Document Set-up are the same ones we took in the last session to start work on the Header and Footer text. (The Header and Footer text is, after all, part of the Document Set-up.) You bring the 'Editor' Actions menu onto the screen, select `Document Set-up` and press [ENTER].

Do this now. (Look at the Information lines if you aren't sure how to bring the Actions menu onto the screen.) LocoScript then displays the special Pagination screen, together with a special set of menus – the ones used to change details of the Document Set-up.



The menus we will be using in this session to set the sizes of Header and Footer zones, the rules about page breaks, the Stock Layouts, etc. are the Page menu and the Layout menu. We start this session by showing you how to set the first page number and the total number of pages.

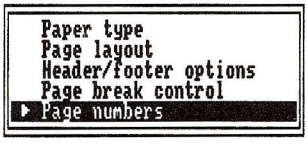
Setting the page numbers

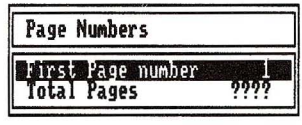
LocoScript initially makes the first page of your document Page 1. But this won't always be what you want. If your document contains an additional chapter for a book, for example, you will want its page numbers to follow on from the old last page of this book.

Similarly, LocoScript initially assumes that the total number of pages you want to quote when you put `Page` *n* `of` *m* on each page is the total number of pages in this document – when, in fact, the document could just be one section of a very much longer document.

You don't normally have to worry about setting either number, because there is a way of telling LocoScript that documents follow each other in a particular order before you print them. This sets up both the first page number and the Total Pages number for each document for you. We show you how this works in the next session. What we describe here is how to set both directly in the Document Set-up.

The menu you use to change both the first page number and the total number of pages is the 'Document Set-up' Page menu. To bring this menu onto the screen, press [f5]. The option you want is `Page Numbers:` so select this option and then press [ENTER]. LocoScript then displays the Page Numbers submenu:





This new menu is a Settings menu – but, as you have probably noticed, it is different from the other Settings menus you have met in that it has settable numbers, rather than a system of ticks marking selected items. You will see another menu like this later in the session.

The first line of the menu tells you the current page number for the first page. To change this number, check that the Menu cursor is on this line of the menu, type the number you want and press [ENTER]. Try setting the first page number to `21`. Notice how the menu stays on the screen after you have pressed [ENTER] – in case you now want to change the Total Pages number. You have to press [ENTER] again to clear the menu off the screen.

The other line of the menu enables you to set a Total Pages number. If a Total Pages number is set, LocoScript will use this wherever you put a Last Page Number code (`LPageNo`) instead of the last page number it calculates from the First page number and the number of pages in the document.

The Total Pages number is set in exactly the same way as the First Page number. You just move the Menu cursor to this line of the menu, type in the Total Pages number you want (say, `42`) and then press [ENTER]. Again, pressing [ENTER] just confirms the number you have typed and the menu stays on the screen – in case you want to change either number again. (If the Total Pages number has been set in the past and you want to clear it again, just point to the Total Pages line with the Menu cursor and press [-]: the entry then becomes `????` again.)

In general, there is no need to set the Total Pages number. You only need to worry about it at all if you have a string of documents and then only if you are using a page numbering style like `Page` *n* `of` *m*.

When you have finished setting the First Page and Total Pages numbers you want, press [ENTER]. This returns you to the Pagination Screen – so that you can now change other aspects of the Document Set-up.

Setting the page break rules

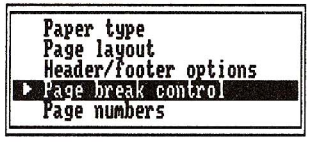
There are two basic rules about page breaks:

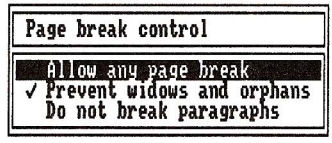
- whether page breaks are allowed to happen in the middle of a paragraph or only between paragraphs
- and, if so, whether Widows and Orphans are allowed

(Widows and Orphans are the names used to describe single lines separated by a page break from the rest of the paragraph – either at the bottom of the page or at the top of the next page.)

Unless you tell it otherwise (for example, by setting this in your template – see Session 24), LocoScript lays out the pages of your document assuming that it is OK to split a paragraph between one page and another but Widows and Orphans are not allowed – ie. if the paragraph is divided, then at least two lines of the paragraph must appear both at the bottom of one page and at the top of the next.

The menu option you use to change this is the `Page Break Control` option of the Page menu – the same initial menu as you have just used to set the First Page and Total Pages numbers. Bring this menu onto the screen by pressing [f5], select `Page Break Control` and then press [ENTER].



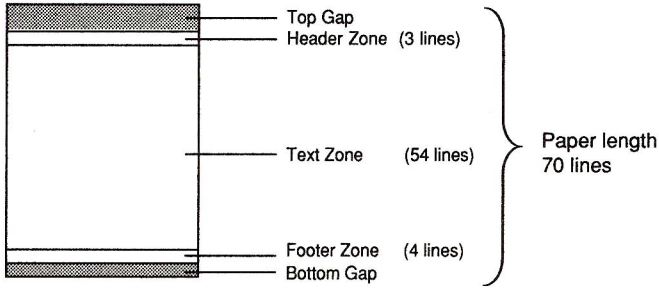


The submenu that appears is a 'Settings' menu offering three choices. If you don't care where paragraphs are split, then you want the first option (`Allow any page break`); if you don't mind paragraphs being split but you don't want any Widows and Orphans, select the second option (`Prevent Widows and Orphans`); if you don't want any paragraphs to be split, select the third option (`Don't break paragraphs`).

You can only ever choose one of these three, so just point to the option you want and press [⊞]. This option then automatically becomes selected (with the tick beside it), with the other two options cleared. Press [ENTER] to tell LocoScript to go ahead.

Dividing up the page – the Page Layout

In this section, we are going to look at the process of changing the Page Layout – that is, the way lines on the page are allocated to the Header Zone, the Text Zone and the Footer Zone.



How many lines you have in these three zones depends very much on the type of paper you are using. When you are using A4 paper, each page is 11⅔ inches – or 70 standard lines – long. (Remember how pages are always measured in standard 6-Pitch lines?) When you use A5 paper (the size of paper used for this user guide), the page length is 8⅓ inches – or 50 standard lines. In other words, the page length is fixed by the type of paper the document is set up to use. (We show you how to use different types of paper in Session 20.)

The size of the three zones is also affected by the size of the Top and Bottom Gaps. As we explained in the last session, these gaps mark areas at the very top and at the very bottom of the paper that the printer can't print on or, in the case of continuous stationery, that you don't want it to print on. The size of the Top and Bottom Gaps are again a feature of the type of paper you are using. For example, on the built-in printer, you can't print on the top 1" or the bottom ½" of A4 paper.

This means you are left with a fixed number of lines in the middle that you can divide between the Header Zone, the Footer Zone and the Text Zone. For example, for the A4 paper you have been using, the total length of the page is 70 lines, the top gap is 6 lines (1") and the bottom gap is 3 lines (½") – giving you a total of 61 lines to divide between these three zones.

What you set is the depth of the Header zone and the depth of the Footer zone – the two distances marked on the above diagram. Setting these also sets how many lines can be used on each page to print the document itself, because the total is fixed by the page length and the two gaps.

The menu option to use to set these Zone sizes is the `Page Layout` option of the Page menu. When you select this option and press [ENTER], this menu appears:

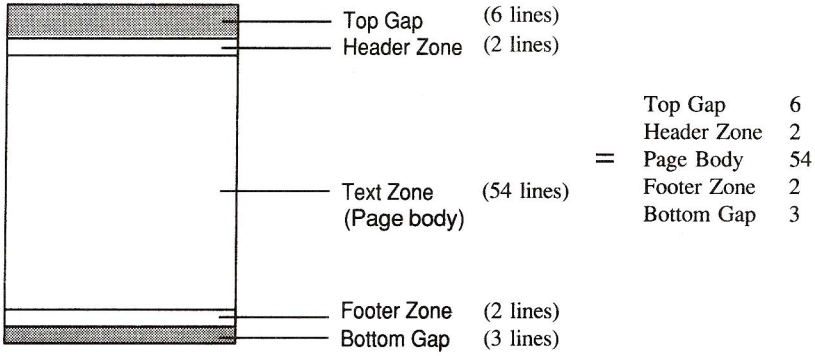
Page layout	
Top gap	6
Header zone	3
Page body	54
Footer zone	4
✓ Fixed footer zone	
Floating footer zone	
Bottom gap	3
Paper length	70

If you are not sure how long a page you have to work with and how big the top and bottom gaps are, then it's a good idea to bring this submenu onto the screen before you start working out how large you want the Header and Footer zones to be. As you see, included in the menu are details of the page length and the sizes of the gaps.

Working out where to put the Headers and Footers

To work out where to put the Headers and Footers, draw a little sketch of your sheet of paper and shade in the parts of the page covered by the Top and Bottom Gaps – because these can't be used in any of the three zones you are interested in. Now sketch out how you would like the rest of the page used. Remember to allow, not only for the length of Header text and the Footer text you want to use, but also for any blank lines that you want between the Header and Footer text and the main document text and between the Top Gap and the Header text.

Take the details of the Header and Footer Zone depths from this sketch. For example, your sketch might suggest that you want a Header Zone of 2 lines and a Footer Zone of 2 lines.



You now have the details you need to put into the Page Layout submenu. This is another Settings menu in which you type in the numbers you want. The current settings for the Header and Footer Zone are displayed. So to set the Header Zone to 2 lines, check that the Menu cursor is on `Header zone` and then type `2` [ENTER]; and to set the Footer Zone to 2 lines, check that the Menu cursor is on `Footer zone` and then type `2` [ENTER]. As you set these numbers, the `Page Body` number also changes – so that you can see how many lines you are leaving for the Document Text.

The position of the Footer Zone

Beneath the Footer Zone setting in the Page Layout menu are a couple of options that we have ignored so far. These give you a choice of whether to keep your Footer text at a fixed position on the page or whether you want it to be immediately under the last line of text on the page.

Selecting a `Fixed Footer Zone` is the way to ensure that the Footer text will be at the same position on each page – which is what you will probably need. However, when your Footer text is something like `continues...` and `ends`, then you will want a `Floating Footer Zone` so that the `ends` (in particular) appears immediately after the last line of the document – wherever that comes on the page.

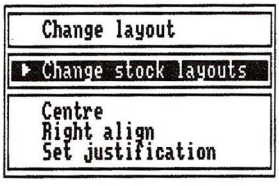
Set the option you require by picking it out with the Menu cursor and pressing [⊞]. Again, you can only have either a Fixed Footer Zone or a Floating Footer Zone – so setting one automatically clears the other.

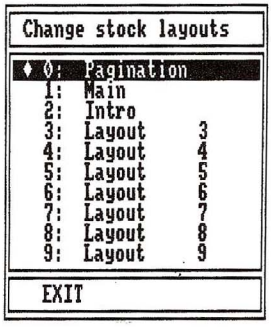
When you have finished setting the Zone sizes etc., press [ENTER] again – to finish using the menu and return to the Pagination Screen.

Changing the document's Stock Layouts

A document's Stock Layouts are its supply of up to ten pre-prepared Layouts that can be used as patterns for the Layouts used in the document. These are stored in the Document Set-up.

Whenever you create a document, ten Stock Layouts are already set up for you. But these won't always be set up or named the way you want – and you obviously won't find them at all helpful until they are correctly set up. The menu option you use to do this is the Change Stock Layouts option of the Layout menu – so the first step is to press [f2], select `Change Stock Layouts` and press [ENTER]. LocoScript then displays a menu of the Stock Layouts – rather like the one you see when you use Stock Layouts (see Session 12).





Now move the Menu cursor to the Stock Layout you want to change – say, the `Intro` Layout – and press [ENTER] This puts you into the Layout Editor and you can now change any aspect of the Stock Layout – margins, tabs, character pitch, line spacing, etc. – exactly as if you were setting up the details you wanted in a new Layout code for use in your document. You can also change the name to whatever you want. (The actions you use are described in detail in Session 12.) The only difference is that you can't set more than 15 tabs in a Stock Layout, whereas you can set up to 30 tabs in the Layout code.

Make whatever changes you want and then press [EXIT]. This time, instead of going back to the document, you go back to the menu of Stock Layouts – so that you can now set up or change another of the Stock Layouts. If you want to change another Stock Layout, just pick this out with the Menu cursor and press [ENTER]. If you don't want to set up any other Stock Layouts, press [CAN].

Saving the new Document Set-up

When all the changes you want have been made to the Document Set-up, press [EXIT] to tell LocoScript that you want to save these new settings and go back to working on the document text. As you will remember from the previous session, the menu that appears gives you a choice of the part of the document you want to return to –

either the start of the document or the place you were working when you selected the Document Set-up option. The main difference is one of speed: if you opt to go back to where you had been working, there could be a noticeable pause while LocoScript checks and adjusts the layout of the document up to that point.

The effects of the new Document Set-up

What effect will these changes to the Document Set-up have had on your document?

- **First Page and Total Pages numbers:** Setting new numbers, simply changes any page numbers LocoScript inserts when the document is printed.
- **Page Break rules** and **Header and Footer Zones:** After you change either of these, all the End-of-page lines will probably have moved.
- **Stock Layouts:** Changing the Stock Layouts has no immediate effect because these are just patterns for any new Layouts you put in the document.

It's a good idea in any case to scan through the document checking the page breaks in case you need to put in any new Keep codes – to stop headings being divided from the text they refer to and to stop tables from being split across two pages (see Session 15).

Updating a document to use the new Layouts

The other thing you may want to do at this stage is update the Layout codes in the document so that it uses a more consistent set of Layouts.

Having a consistent set of Layouts is more aesthetically pleasing but there is a practical advantage as well. With the same Layout used for similar jobs throughout, it becomes more straightforward to move text around the document or between documents that use the same range of Stock Layouts – because when you insert the text in an area that uses the same Layout, you don't have to make sure that the text includes its Layout code. Whether the code is included or not, you will still get the same result.

The other reason you might want to use this feature is if you use one set of Layouts for the planning stage of a report, say, but another set when you come to fill out the outline report with detail. You could prepare your text initially in a document with one set of Stock Layouts and then insert the whole document into a new document with the other set of Layouts and then update all the Layouts to match the new set.

There are two possible ways of updating the Layout codes in a document.

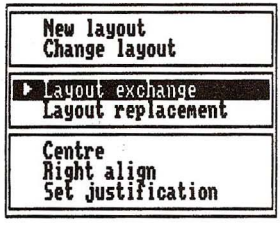
One way is to work through each Layout code in turn, deciding whether you want to keep the Layout as it is or change it, either to the new version of the original Stock Layout or in some other way. This is called 'Exchanging' the Layouts, and it is the type of updating that you would use to get a more consistent set of Layouts throughout.

The other type of updating you can do is more automatic. This allows you to pick out a number of Stock Layouts and then tell LocoScript 2 to work through the document updating all the Layouts that were originally created from earlier versions of these Stock Layouts. This is called 'Replacing' the Layouts – and is the type of updating to use if you have different Layouts for your outline document and the finished article.

Exchanging Layouts

The process of exchanging Layouts is carried out forwards from the current position of the Text cursor – in very much the same way as Find and Exchange work forward from the Text cursor (see Session 14). So the first job is to position the Text cursor so that it is higher up the document than the first Layout you want to update – at the very beginning of the document, perhaps.

The menu option used here is the Layout Exchange option in the Layout menu. So the next step is to press [f2] to bring the Layout menu onto the screen, move the Menu cursor to `Layout Exchange` and press [ENTER]. LocoScript then searches down the document for a `(LayouT)` code. When it finds this, it displays the message like that shown here:



The message tells you the name of the Layout LocoScript found and gives you a choice of actions. You can:



- replace the Layout by a copy of one of the Stock Layouts; or
- leave the Layout as it is – in which case LocoScript simply searches for the next Layout code; or
- change the Layout – with the aid of the Layout Editor, before going on and searching for the next Layout code; or
- abandon exchanging Layouts – in which case, you return to the document

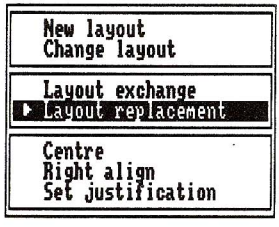
To see how the Replace option works, select `Replace by Stock Layout` with the Menu cursor and press [ENTER]. LocoScript now displays a menu of Stock Layouts, exactly like the menu you see when you call up the Stock menu from within the Layout Editor.

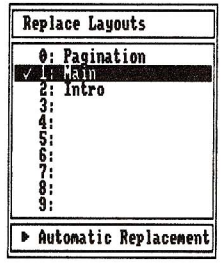
The first Layout in the example document is a copy of Stock Layout 2. So to update it, move the Menu cursor to Layout 2 and press [ENTER]. LocoScript then replaces the Layout code with a copy of the current Stock Layout 2, and goes on to search for the next Layout code. When it finds this, it displays the name of the Layout and the range of options – just as before.

Replacing Layouts

Replacing Layouts is the more automatic way of updating the Layout codes in your document. You specify which Layouts you want updated and LocoScript works forward through the document, replacing earlier copies of these Stock Layouts with copies of the current versions. The menu option you use to do this is the Layout Replacement option in the Layout menu.

Because the replacement is carried out forward from your current working position (rather like the Find and Exchange features we described in Session 14), you first move the Text cursor to just before the first Layout code that you want to update. When the cursor is in place, press [f2] to bring the Layout menu onto the screen, select `Layout Replacement` and press [ENTER]. LocoScript now displays a menu of the Stock Layouts, for you to pick out the Layouts you want to update:





The next step is to pick out these Layouts. To do this, you move the Menu cursor to each Stock Layout you are interested in and press [+] – putting a tick beside the name of the Stock Layout. (If you pick out one by accident or change your mind, point to it and press [-] in the usual way.)

When you are ready, press [ENTER] – to tell LocoScript to go ahead and automatically replace the old copies of these Stock Layouts with copies of the current versions. LocoScript then searches for Layout codes with the same names as the Stock Layouts you picked out and updates these for you.

Note: Updating in this way involves a lot of reformatting and so takes a little time.

Session summary

In this session, you have seen:

- How to change settings held in the Document Set-up
- How to set the number of the first page and the Total Pages Number
- How to set the basic rules about page breaks
- How to set the sizes of the Header and Footer Zones and the position of the first line of the Header and the Footer
- How to change a document's range of Stock Layouts
- What effects changing these aspects of the Document Set-up have
- How to update existing Layout codes so that they match the current Stock Layouts

Session 19

Large documents

So far, what we have been dealing with have been reasonably small documents – two or three pages long at the most. What we look at in this session are the solutions LocoScript has to the problems of writing lengthy reports or a book:

- moving from one section to another quickly and easily in a long document
- running out of room on the disc, because the document you are working on is too large

The document we are going to edit is `PCWINFO1`, which is stored in `group 1` (the EXAMPLES group) of your Start-of-day disc, so the first step is to open this for editing. (Turn back to Session 5 if you are not sure how to do this.)

Moving around a large document

LocoScript gives you a number of ways of moving the Text cursor, as we have seen. Two methods are especially useful for moving around large documents:

- moving directly to a particular page by using the Find Page option of the Page menu (see Session 5), and
- LocoScript's system of Unit markers, which divide a document into sections (or Units) and help you to move from one section to the next.

How to insert Unit markers and then use these to move around your document is described below.

Note: Typically, these actions involve making some quite large jumps. While it makes such moves, LocoScript clears the screen and puts up a message telling you about the move it is making. If it's not the move you want, press STOP, wait for LocoScript to pause and then press STOP again to stop LocoScript moving the Text cursor any further.

Unit markers

Using Unit markers is a two-stage operation:

- first you have to insert markers in the document at the beginning of each section you want to pick out;
- then you use the markers to move the Text cursor quickly to the start of the next section or to the beginning of the previous section.

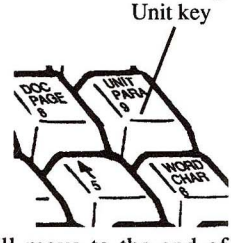
Inserting a Unit marker

The example document has three distinct sections – the first part up to Section 1, Section 1 itself and Section 2. The way to make it easy to move to the beginning of any of these sections is to put Unit markers at the beginning of Sections 1 and 2.

A Unit marker is, in fact, just another word processing code – represented on the screen by `(UniT)`. As well as being a marker, this code has the action of a ↵ – so typically you replace the ↵ immediately before the start of the section of text by the Unit code.

This particular code can't be inserted through a menu: it can only be inserted by keystroking (or through the associated Set menu). The keystroking to use is [⊞]UT. So to insert a Unit marker at the beginning of Section 1, you move the Text cursor to the beginning of this section, delete the ↵, press [⊞] and type `UT`. LocoScript then inserts a `(UniT)` code in the document.

Exactly the same steps are used to put the second Unit marker at the beginning of Section 2. Move the Text cursor to the beginning of Section 2, press [⊞] and then type `UT`. LocoScript then inserts another `(UniT)` code in the document – marking the start of another Unit of the document.



Moving to a Unit marker

You move the Text cursor to a Unit marker by pressing the [UNT] key. To see how this works, start by moving the Text cursor somewhere in Section 1.

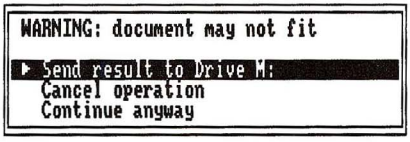
To move the Text cursor to the beginning of the next Unit, press [UNT] – ie. [SHIFT]+[PARA]. Do this now: the Text cursor will move to the start of Section 2. (Do it again, and you will move to the end of the document.)

To move the Text cursor to the beginning of the previous Unit, hold down [ALT] as you press [UNT]. Place the Text cursor somewhere in Section 2, press [ALT]+[UNT]: and it will move to the start of Section 2. Do it again, and the Text cursor will move to the start of Section 1. (Do it again, and it will move to the start of the document.)

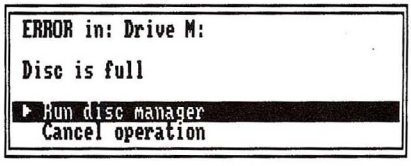
Over-size documents

A document becomes over-size when there is no longer room on the disc to edit it. (There has to be at least as much free space on a disc as the size of the document you want to edit so that the new version can be stored before the old version is thrown away – an obvious safety precaution, if you think about it.)

If there isn't room on the disc to save a new version of the document you pick out for editing, LocoScript 2 spots this and puts up a message like this:



A more traumatic effect of working with an over-size document is that you may run out of disc space while you are in the middle of editing the document. LocoScript saves away portions of your document to disc while you are working and if you have been adding a lot of new text to your document, you might easily find yourself running out of space on the disc. You can also run out of space on Drive M if you have a lot of text copied into Blocks. When either of these happen, you will see a message like this:



Short-term solutions

The short term solution to both of these problems is to spend some time throwing away any documents on the disc you don't need and moving others to a different disc until you have made enough room.

As you would expect, you use the Disc Manager both to erase documents and to move them. If the problem happened as you tried to edit or copy a document, you are already using the Disc Manager. When it happens in the middle of editing a document, your best course of action is to make a note of which Drive the message is telling you is affected, and then take the `Run Disc Manager` option. Selecting `Cancel operation` (or pressing the CAN key) is not a good idea unless you really know what you are doing, for the simple reason that it throws away all the editing that you have done so far and returns you to the Disc Manager Screen.

If you select `Run Disc Manager`, LocoScript temporarily replaces your document by the Disc Manager Screen. (You can tell it hasn't abandoned the document you're working on by looking at the top Information line: this still shows the details of your document.) You can now pick out documents and use the File menu to erase them or to move them to a different disc – exactly as if you were doing this before you had started editing the current document.

But whatever you do, **don't remove the disc you are working on from its drive** and

replace it by another disc. If you want to move a document off your current disc to another disc and you only have a single-disc machine, move it to Drive M.

Stop moving and erasing documents when you have made enough free space, bearing in mind the original size of your document and the changes you want to make to it. You will need at least 1k more free space for every 1000 characters and word-processing codes you want to add to the document. (You can see how much room there is on the disc by looking up at the relevant drive summary towards the top of the screen.)

Press [EXIT] to return to editing the document.

• Before you go on to the next part of this tutorial, finish the current edit (ie. select the `Finish edit` option from the Exit menu).

Long-term solutions

Repeatedly finding documents to move or erase whenever the disc is full is far from an ideal solution. What you probably need to do is to split your large document into smaller parts. Editing one of these smaller parts doesn't need anything like the same amount of free space on the disc – and, as we shall show you later in this session, you can get LocoScript to ensure that the page numbers are consecutive. There is really no need to work with large documents at all.

Splitting a large document into smaller documents

There are two possible ways of splitting a large document into a number of smaller documents.

One method is to make a copy of the original document for each of the new smaller documents and delete all the text from this copy except the section you want to keep. And because you produce these by copying the original document, the new documents all share the same basic page layout – without any extra effort on your part.

The other method is to cut out each section into a separate Block and then paste each Block into a separate copy of the 'empty' document you created by removing these blocks. The advantage of this method is that it requires less free space on the disc when you start.

We shall now illustrate the second of these methods.

Suppose you wanted to split a copy of the example document into three smaller documents – the section up to Section 1, Section 1 and Section 2, ie. the three sections we marked earlier with Unit markers. We will call these new documents INTRO.TXT, SECTION1.TXT and SECTION2.TXT.

Create the document to work on by using the f3 File menu to copy PCWINFO1 to a new file, which we suggest you call INTRO.TXT.

The first stage is to edit the document and to cut the sections of text you require into separate blocks. So open the new INTRO.TXT document for editing.

The first job is to mark out the part up to the beginning of Section 1 as a Block (Block 0) and delete it, using the techniques we used in Session 6. Remember, now you have the Unit marker marking the beginning of Section 1, you can move the Text cursor to the end of the Block simply by pressing [UNIT].

Use similar steps to mark out the whole of Section 1 as Block 1 and the whole of Section 2 as Block 2.

Now press [EXIT] and save what is left of INTRO.TXT. Although this appears empty, it has all the Layout and Document Set-up information in it, which is what we want at this stage.

Now use the f3 File menu to copy the current version of INTRO.TXT – first creating a new document called SECTION1.TXT and then another called SECTION2.TXT.

Finally, edit each of the three documents – INTRO.TXT, SECTION1.TXT and SECTION2.TXT – in turn and paste in the appropriate Block as follows:

- Paste Block 0 into INTRO.TXT
- Paste Block 1 into SECTION1.TXT
- Paste Block 2 into SECTION2.TXT

and save the results. (In each case, just press [PASTE] and type the number of the Block you want to insert.) At the end of this process, you now have three smaller documents where before you had one larger document.

Giving documents consecutive pages

Preparing a large document as a number of separate documents means that you get several `Page 1`s – unless you set up the First Page numbers of each document so that the page numbers run consecutively. What we are going to show you here is how to get LocoScript 2 to set up all the First Page numbers for you – and the Total Pages number as well, if you want.

Suppose INTRO.TXT, SECTION1.TXT and SECTION2.TXT were the chapters of a book that you had been working on and were now ready to print. (It's not really worth setting all the page numbers until you have finished preparing the text – because if you change something that makes the page numbers change, you may find yourself re-setting the numbers later!)

The first job is to set all the First Page numbers but before you get going, it is a good idea to check that the first chapter you are going to pick out (ie. INTRO.TXT)

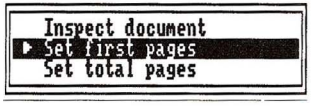
has the right First Page number to start with. This is important because you use this number to set the initial value of the counter that LocoScript will use in its calculations. LocoScript automatically starts the counter at its most recent value – so that, for example, you can set the page numbers for the documents you have on one disc; stop and change discs; and then carry on the sequence with documents you have stored on another disc.

The easiest way to check the First Page number is to display the Disc Manager Screen and use the Inspect option in the Document menu. (We used this option in Session 7 to set up and inspect short descriptions of documents.) Pick out the document you want with the File cursor, then press [f5] and [ENTER] and LocoScript displays a range of details about the document, including its First Page number. (Press [ENTER] when you have finished checking this.) If the First Page number isn't the one you want, correct this now by editing the Document Set-up.

Setting the First Page numbers

Setting First Page numbers also uses the Document menu, but before you display this menu, you must pick out the first document of the sequence with the file cursor.

The document to pick out, as you might expect, is the first chapter of your book or the first section of your report. In our example case, this means picking out INTRO.TXT – so move the File cursor to INTRO.TXT; then press [f5] to display the Document menu.



The option you want here is `Set First Pages`, so select this with the Menu cursor and then press [ENTER]. LocoScript 2 now displays a Selection menu, giving details of the document you have picked out.



At the bottom of the menu are two 'Command' options, `Set First Page=Counter` and `Set Counter=First Page`. For the first document in the sequence, the option to pick is `Set Counter=First Page` because this sets the counter to match the First Page number of the first document in the sequence. Select this option and press [ENTER]

Next, you will see a message on the screen telling you to pick out a document. Move the File cursor to the second document in the series – SECTION1.TXT – and press [ENTER]. This document happens to be in the same group as the previous document but this doesn't have to be the case. You can pick out any document you like from the ones currently available on the Disc Manager Screen.

Once again, you now see the Selection menu – but with a difference. The difference is that you just get one option at the bottom of the menu – to `Set First Page=Counter`. This time, the counter is correctly set to one more than the last page number of the previous document.

Press [ENTER] to take the `Set First Page=Counter` option and once again, the message asking you to pick out a document will appear. This time, move the File cursor to SECTION2.TXT before pressing [ENTER]: you will then see the details of SECTION2.TXT and the new value for the counter. Press [ENTER] to set the First Page number to the counter.

That's the last document in the series – so this time when the message appears asking you to pick out a document, press [CAN]. You are then returned to the Disc Manager Screen. All the First Page numbers have now be set so that the pages are consecutive.

Note: If you accidentally pick out the wrong document at any stage in this process – don't panic. You don't have to go back to the beginning and start again. Instead, just press [CAN] (which takes you back to the Disc Manager Screen), pick out the **right** document with the File cursor, then open the Document menu and select `Set First Pages` as if you were starting afresh. LocoScript then displays the version of the Selection menu with two 'Command' options at the bottom of the menu. The option to select is `Set First Page=Counter` – because the counter will be showing the right value. You can then carry on setting the page numbers as if nothing had happened.

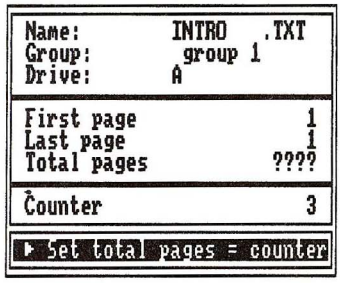
Setting the Total Pages number

If you use a numbering scheme like `Page` *n* `of` *m*, you also need LocoScript 2 to set up the Total Pages number for each document. Do this immediately after you set the First Page number of the last document in the sequence – so that you know that the counter will be set to the right value.

Again this is carried out from the Disc Manager Screen and again you need the Document menu – but this time the option to pick is `Set Total Pages`. Pick out one of the documents from the sequence – say INTRO.TXT. Then press [/5] to bring the Document menu onto the screen, select `Set Total Pages` and press [ENTER]

This time it doesn't matter which order you pick out the documents because they will all be given the same Total Pages number. However, in practice it may well be easiest to remember which documents to pick out if you do pick them out in order!

LocoScript 2 then displays a Selection menu giving all the details of INTRO.TXT – ie. of the document you have picked out and the current setting of the counter – just like the ones you saw while you were setting the First Page numbers. However, this time the counter shows the number of the last page of the last document you picked out in the sequence.



This time, you just get the one option, `Set Total Pages`. This sets the Total Pages number to the counter: press [ENTER] to tell LocoScript to do this.

You then see the message asking you to pick out a document again. Move the File cursor to the next document you want to set (say, SECTION1.TXT) and press [ENTER]; then press [ENTER] again to tell LocoScript to set the Total Pages number; and so on until you have set all the Total Pages numbers. When you have picked out all the documents – press [CAN] when you are next asked to pick a document.

If you like, you could now check that this has been done properly for INTRO.TXT, SECTION1.TXT and SECTION2.TXT by printing these out. (The appropriate header and footer text should have remained from Session17).

Note: Once again, you can press [CAN] if you accidentally pick out the wrong document – just as you could when you were setting First Page numbers. When you are returned to the Disc Manager Screen, pick out the right document with the File cursor, select the `Set Total Pages` option – and carry on as if nothing had happened.

Revising the page numbers

To finish, we'll take a quick look at what you do when you need to change some of the page numbers you have set up – because you have made some change that has given you a different number of pages than you had before or you have decided to change the order of some of the sections.

Suppose, for example, that you had made some change to SECTION1.TXT that meant that it had one less page than before. This puts out the First Page number of SECTION2.TXT and makes the Total Pages number wrong for all three documents.

Move the File cursor to **the first document in the sequence that now has a different number of pages**. In our example case, that means moving the File cursor to SECTION1.TXT.

Press [f5] to bring the Document menu onto the screen and then select `Set First Pages`. Even if you have only changed the total number of pages, you still have to start by selecting `Set First Pages` so that you can set the counter. Press [ENTER]

The usual Selection menu then appears. Because the change is within this document, its current First Page number is correct and doesn't need to be changed. What you need to do here is to set the counter to this number to get the ball rolling. So move the Menu cursor to `Set Counter=First Page` and press [ENTER]

Back comes the message asking you to pick out a document. You now need to work through the rest of the documents in the sequence in order, just as if you were setting their First Page numbers for the first time. Not only are these numbers likely to be all wrong, you also need to work through to the end if you have to correct the Total Pages numbers.

If you are using the Total Pages number, you will need to work through **all** the documents in the sequence – just like you did before. Do this when you have finished setting all the First Page numbers.

Session summary

In this session, you have seen:

- How to put in section markers (Unit codes) and how to move forward to the next section marker or back to the last one
- How documents can become over-size and how LocoScript tells you that this has happened
- What short-term solutions you have to the problem of an over-size document
- What you should do in the long term
- How to split a large document into a number of smaller documents
- How to set the first page number of a series of documents so that the pages of the documents follow on from one another
- How to set the same Total Pages number in a number of documents so that you can use the `Page` *n* `of` *m* type of page numbering across a series of documents

Session 20

Using different types of paper

In all the sessions up to now, we have been telling you to use A4 sheets of paper every time you printed any of the example documents.

We insisted on A4 in this way because we knew that both the part of the software that controls the printer and the documents you were printing were set up for A4 sheets of paper.

If you are happy to go on using A4 for every document you ever print, that's fine – but you will be restricting yourself unnecessarily. LocoScript 2 is well equipped to handle a wide range of different sizes and types of paper – labels, 11" fanfold paper, large A3 sheets, small A5 sheets to name but a few.

A number of these different types of paper are available as standard. If you have a special paper requirement, you just describe the paper to LocoScript 2 and it will use it properly. You can even add this type of paper to its list of standard types.

To use these different types of paper, both the software controlling the printer and the document that is going to be printed on this paper need to be set up for it. In this session, we are going to show you how this is done by setting up one of the Example documents (`SPELL.TXT`) for printing on A5 paper and then print it out first on A5 paper and then on A4 paper. (A5 paper is half the size of A4. The pages of this user guide, for example, are A5.)

Why set up the printer?

The printer needs to be set up for the type of paper you want to use so that each piece of paper is fed through the mechanism properly. Different types of paper need different handling.

For example, when you use 11" continuous stationery, you want the printer to advance the paper exactly 11" between the top of one page and the top of the next sheet. Similarly, you want the printer to 'know' how many lines it can print on a single sheet of paper. If it doesn't, it may try to print in the area at the bottom of the page where the paper is no longer held firmly by the printer mechanism. Text printed in that part of the page is very unlikely to be straight.

Having the printer set up for the type of paper you intend to use is crucial. You should never mislead LocoScript about the paper you are using in the printer.

Why set up the document?

You set the type of paper you want to use in the document because LocoScript divides up your documents into pages for you. In order to do this properly, LocoScript needs to know the number of lines that you can put on each page – and that is fixed by the size of the paper. (Remember, how when we were setting up Header and Footer zones in Session 17, we said that the page length was fixed by the type of paper?) In other words, you set the type of paper you want to use in the document so that it is divided up into pages correctly.

However, your document only needs to be set up for the paper you ultimately want to print it on – that is, the paper you will use when you print the final version. While you are preparing the document, you can produce Draft versions on different (cheaper) paper. For example, you can always use 11" continuous stationery to print Draft versions of documents set up for A4, as we shall see below.

The key concept – Paper Type

All the details that LocoScript 2 needs in order to lay out and print your documents correctly on a particular type of paper are described by this paper's Paper Type. This Paper Type fixes:

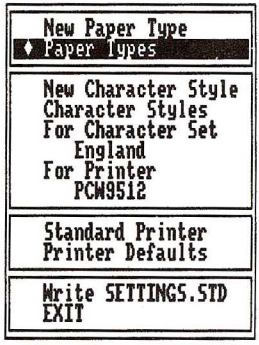
- whether the paper comes in single sheets or as continuous stationery
- the length of each sheet
- the width of each sheet; and
- the size of the Top and Bottom Gaps – ie. the areas at the top and the bottom of the sheet on which the printer never prints

LocoScript 2 is set up to know about certain types of paper – typically, A4 and A5 single sheet stationery and 11" continuous stationery. LocoScript 2 keeps the details of these Paper Types in its store of 'Settings', which also holds details of the printer(s) you use – as we shall see in Session 23. These Settings are recorded in the SETTINGS.STD file on your Start-of-day disc, which is automatically read each time you load LocoScript.

Using one of the Paper Types is very straightforward. Essentially all you have to do is pick out the name of the Paper Type you want to use, and LocoScript 2 does all the 'difficult' part of setting up the details of this type of paper for you.

However, this doesn't mean that you always have to use one of these standard types of paper because you can specify your own Paper Types as well. LocoScript 2 can handle up to 10 different 'standard' Paper Types. And when you want to use a special type of paper for one particular document, you can set up a 'special' Paper Type for the document, with its own details of length, width etc.

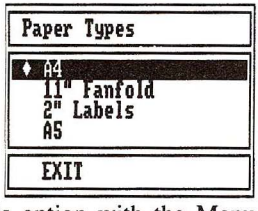
Seeing what Paper Types you have



As we said above, LocoScript 2 keeps all the information about the Paper Types in its store of Settings.

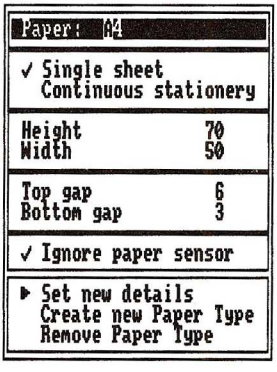
You have access to this information from the Disc Manager Screen – through the Settings menu, which is brought onto the screen by pressing [f6] (as you can see from the Information lines at the top of the screen). So to see what Paper Types you have, display the Disc Manager Screen and then press [f6] to display the Settings menu.

This menu is a Commands menu but it is different from most of the Commands menus you have used up to now in that the selected option is marked with a diamond ♦ rather than an arrow ▶. You met this type of menu before in Session 12 when you used the Left offset menu to adjust the position of the print head for Direct Printing. Once again, the diamond tells you that when you press [ENTER], LocoScript will carry out the command and then return you to this menu so that you can pick out either the same command again or a different one.



The option you want here is `Paper Types`. Select this option with the Menu cursor and press [ENTER]. LocoScript then displays a menu showing the names of all the Paper Types it knows. Typically, each name will give you a pretty good idea of the paper it refers to. For example, `A4` refers to standard A4 paper (single sheets, 11⅞ inches long and 8⅓ inches wide); `11" Fanfold` refers to 11" continuous stationery (fanfold paper, each sheet 11 inches long).

To see the details of a particular Paper Type, point to this Type and press [ENTER]. For example, to see the details of A4 paper, move the Menu cursor to `A4` and press [ENTER]. The following menu is then displayed. This gives the current specification for the Paper Type you picked out. Most of the details are self explanatory. `Single Sheet` is ticked because A4 paper comes as a number of separate sheets. The Height and Width of the paper give physical dimensions of the paper. The Top and Bottom Gaps, as you remember, are the parts of paper on which you don't want LocoScript to try to print – either because the paper isn't held firmly enough by the printer mechanism or to avoid the line of perforations between one page and the next.



The Height and Width of the paper and the Top and Bottom Gaps are all given as a number of lines. These 'lines' are standard 6-Pitch lines (6 lines to the inch) – just as the Paper Length and Header and Footer Zone sizes you used in Session 18 were.

A4 paper is 11⅔ inches long and 8⅓ inches wide, so its `Height` is 11⅔ x 6 lines (ie. 70 lines) and its `Width` is 8⅓ x 6 lines (ie. 50 lines). The printer cannot print on the top 1" of the page or on the bottom ½" – so the Top gap is 6 lines and the Bottom Gap is 3 lines.

Why you give the Width as a number of lines is probably puzzling you but, if you think about it, the width of the paper is its length when it is turned on its side. In other words, the `Width` tells LocoScript how many lines it will be able to fit in down the page when the paper is used widthways rather than lengthways.

When you have finished looking at these details, press [ENTER]. LocoScript then re-displays the list of Paper Types, so that you can inspect the details of another Paper Type if you wish. So if, say, you now wanted to look at the details of `11" Fanfold`, you would move the Menu cursor to this option and press [ENTER]. But if you have seen all the Paper Types you want, select the EXIT option at the bottom of the menu – the quick way to do this is to press [EXIT] – and press [ENTER]. You are then returned to the Disc Manager Screen.

Using a Paper Type

OK, LocoScript 2 knows about all these different Paper Types, but how do you use one for a document?

The answer is that you set up the document itself for your chosen Paper Type. Once this has been done, LocoScript 2 helps you to ensure that everything else is set up correctly for you to print the document on this paper.

To demonstrate the steps, we are going to set up SPELL.TXT for printing on A5 paper and then print it out on this paper. So to start, open this document for editing.

Setting up a document for a particular Paper Type

The Paper Type is one of the pieces of information recorded in Document Set-up, so setting a different Paper Type means changing the Document Set-up – which, as you will remember, means selecting the `Document Setup` option in the Actions menu. Press [f1] to bring the Actions menu onto the screen, select `Document Setup` and press [ENTER] now.

Once the Pagination Screen is displayed, you have access to the Document Set-up and you also have an array of menus to help you change this. The one you want here is the Page menu (brought onto the screen by pressing [f5]) and the option you want from this menu is `Paper Type`. Select this option, press [ENTER] and the following menu is displayed:

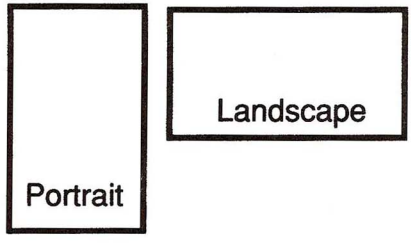


Which Paper Type?

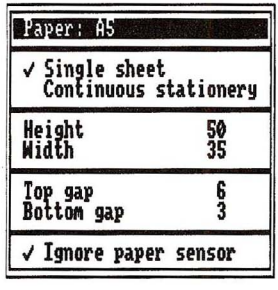
The first job is to select the Paper Type you want. This part of the menu is a Settings menu, with a tick beside the Paper Type that is currently selected. What we want here is A5, so move the cursor to this option and press [⊞] to select it.

Portrait or Landscape?

When you select a type of paper that comes in single sheets (such as A4 or A5), you then need to specify which way round you will want to use the paper. The choices are Portrait or Landscape. Portrait means the paper is used lengthways in the conventional way; Landscape means the paper is used widthways. In this case, select Portrait.



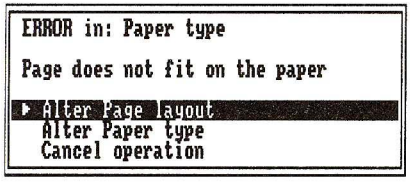
Details of the Paper Type



If you know that the Paper Type properly describes the paper you want to use, all you do now is press [ENTER] to tell LocoScript to use this Paper Type. If, however, you want to check or change any of the details first, move the Menu cursor to Show Paper Type and press [ENTER]. LocoScript then displays a menu like the one we saw when we were inspecting the details of the different Paper Types – giving the current specification for the Paper Type you picked out. A5 paper is 8⅓ inches long and 5⅞ inches wide, so its Height is 8⅓ x 6 lines (ie. 50 lines) and its Width is 5⅞ x 6 lines (ie. 35 lines). Again, the printer cannot print on the top 1" of the page or on the bottom ½" – so the Top gap is 6 lines and the Bottom Gap is 3 lines.

The menu is a standard 'Settings' menu – so you can, if you need, change any of these settings. We will show you how this works shortly. But as we just want to use standard A5 paper, we will leave everything as it is and just press [ENTER]. LocoScript then returns you to the previous menu: this time, move the Menu cursor to Use Paper Type and press [ENTER] to confirm the details you have selected.

Normally, that is all there is to setting the paper type for the document. However, there will be occasions when the paper type you select is too short for the size of Header and Footer zone you have set up in the document's Page Layout (see Session 18). When this happens, LocoScript will bring this to your attention immediately through the following Alert message. You will also see this message when you set a Page Layout that is incompatible with your current Paper Type – by choosing Header and Footer Zone sizes that leave a Page Body that's zero or negative.



When this message appears, you must either change the Page Layout or choose a different Paper Type. Simply select the option you want in this Alert message and LocoScript will display the appropriate submenu so that you can put this right.

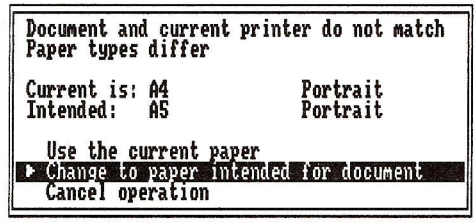
• After you have finished setting the Paper Type in the Document Set-up, press EXIT to finish working on the Document Set-up, select the option to return to the start of the document and press ENTER. The fact that you have changed the Paper Type is shown by the number of lines LocoScript says you have to a page (written at the end of the second Information line). When the document was set up for A4, you had 54 lines of document text on every page; now you have just 34. Finally, press EXIT and save this version of the document.

Printing on the correct paper

We now have SPELL.TXT set up for A5 paper – and we can load A5 paper into the printer. (If you don't have any A5 paper to hand, you can easily prepare a couple of sheets by tearing a sheet of A4 in half.) What we haven't done yet is set up the printer for A5 paper.

As we shall see later in this session, there are some special steps that you can take to set the printer up. But in fact, you rarely have to do this. As you will see, when you have the document set up for the type of paper you want to use, LocoScript 2 helps you either to use the current printer paper or to set up the printer to match the document. All you have to do to start the process is print the document.

Check that the File cursor is on SPELL.TXT; then go through the steps to print one copy of this document (ie. press **P** and then ENTER). Because the printer isn't set up for the same paper as the document, LocoScript puts up the following Alert message:



We want to print on the paper the document is set up for, so the option to take here is to `Change to Paper intended for document`. LocoScript 2 then displays the details of the set-up you have selected, together with the option to Proceed or to Cancel the operation altogether. Assuming that you choose to proceed, LocoScript then sets up the Printer for the same Paper Type as the document before printing the document.

This is a very useful feature of LocoScript 2. If you think about it, it means you never need to worry about setting up the printer for the same paper as the document you are about to print. If the document is not set up for the paper you have just used, LocoScript 2 first puts up an Alert message reminding you which paper the document is set up for and then gives you the option of automatically setting up the printer for the same type of paper. All you need to do is feed the right paper into the printer!

Select the option to Proceed and then, whilst the 'About to print' menu on the screen, feed a sheet of A5 paper into your printer.. Now that the printer has been set up for A5 paper, this is what you must use. Press [ENTER] to clear away the menu; then [EXIT] to leave Printer Control State – and LocoScript 2 will start to print your document. The document should print perfectly.

Drafting on the 'wrong' paper

As we said earlier, LocoScript doesn't force you to print a document on the paper it has been set up for. After all, it is very reasonable to want to produce Draft versions of reports on 11" continuous stationery, rather than on A4 sheets of paper.

However, when you want to do this, you have to remember to arrange that the printer is set up for your Drafting paper **before** you start to print the document. The only Paper Type that LocoScript 2 can set up the printer for on your behalf is the Paper Type set in the Document Set-up.

If you have just been printing on this type of paper, that's fine – the printer is already set up for this type of paper. If you haven't, then you need to set up the printer as follows:

Setting up the printer for a chosen Paper Type

As with any action that involves setting the printer, the first step is to put LocoScript into its Printer Control State – by pressing the [PTR] key. Do this now.

Once you are in Printer Control State, you have an array of menus to help you set up any aspect of the printer. The one you want here is the Paper menu which, as you see, is brought onto the screen by pressing [f3]. Press [f3] now and the following menu appears:



This looks familiar because it has exactly the same design and contains exactly the same sort of information as the Paper Type menu you have just used to set the Paper Type information in the Document Set-up. Moreover, it works in exactly the same way.

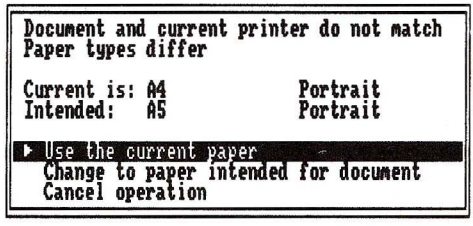
As we said earlier, what is most important here is that the Paper Type you set accurately describes the paper you are going to use. So to produce your Draft version on 11" continuous, say, you move the Menu cursor to `11" Fanfold` and press [⊞]. In this case, we are going to print a document set up for A5 on A4 paper. So select A4 paper and tell LocoScript that you will use this paper `Portrait`. Then, as the Paper Type specifies the paper correctly, just press [ENTER] to tell LocoScript to set up the printer for this Paper Type. If it didn't, you would move the Menu cursor to `Show Paper Type` and set the details you want, exactly as you would to get the document set up correctly for the paper.

Finally, press [EXIT] so that you leave Printer Control State and return to the Disc Manager Screen.

Printing on the chosen paper

Now the printer has been set up specifically for the paper you want to use, you are ready to print SPELL.TXT (the document we have set up for A5 paper) on A4 paper.

Check the File cursor is on SPELL.TXT and press **P** and then [ENTER] to print one copy of this document exactly as before. Because the paper set in the Document Set-up is not the paper the printer is set up for, LocoScript puts up its Alert message:



Whenever you are printing the document on the wrong paper quite deliberately, the option you want is `Use the current paper`. Select this option now, press [ENTER] and feed some A4 paper into your printer. This paper **must** be A4 paper – ie. the paper the printer is set up for. You can't just use any piece of paper you happen to have because, as we explained before, it is essential for the printer to be set up for the paper you actually use – or it won't handle the paper properly.

The example document will now print. As you see, each page that you earlier printed on A5 paper is now printed on a separate sheet on A4 paper. This is because LocoScript retains the way the document is divided up into pages.

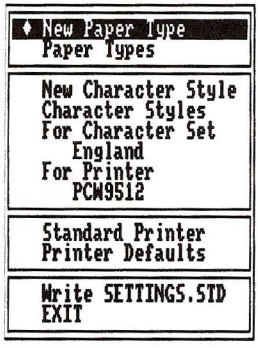
Obviously, printing on longer sheets of paper is fine because the printer can easily fit each page onto a separate sheet of paper. But what happens when the paper you

Obviously, printing on longer sheets of paper is fine because the printer can easily fit each page onto a separate sheet of paper. But what happens when the paper you use is shorter? The answer is that LocoScript still keeps the document divided up into its pages and if there is room for the text on a single sheet of the paper, then it will be printed on just this sheet. Otherwise, it uses two (or more) sheets of paper for every page of the document.

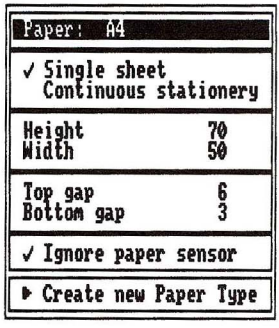
Setting up a new Paper Type

The supplied Paper Types cover the commonest types of stationery, but are unlikely to cover all the sorts of paper you use. If you use a particular type of labels, for example, you will probably want to set up a Paper Type which describes these labels. (You can have up to 10 different Paper Types in all.) To show you how you tell LocoScript about other sorts of paper, we shall now set up a Paper Type for 1½" labels on continuous backing paper. In practice, the ideal time to do this is immediately after you have set up either a document or the printer for this type of paper because then most, if not all, of the information you want will be set up already for you.

As you will remember, all the information about your Paper Types is held in LocoScript's store of Settings – which is recorded in SETTINGS.STD on the Start-of-day disc. So the first stage is to finish editing any document you are currently working on (because you are not allowed to change this Settings file while you have a document open for editing) and display the Disc Manager Screen. When you are ready, press [f6] to bring the Settings menu onto the screen.



The option you want this time is `New Paper Type`. This is the option that is pre-selected for you, so all you have to do is press [ENTER]. LocoScript now displays a special version of the Paper Type menu:



As you see, this menu is already filled in. These are the details of the 'current' Paper Type – that is, either the last Paper Type you picked out from the Paper Types menu (see 'Seeing what Paper Types you have', above), or the Paper Type you have just set up a document or the printer for. What changes you make to these settings is up to you, but you must ensure that you give LocoScript an accurate picture of the paper.

Continuous or Single Sheet

The first item to set is whether the paper is Single Sheet or Continuous. If your paper is supplied as separate sheets, you must ensure that `Single Sheet` is selected – but if it comes as a continuous roll or 'fanfold', you must select `Continuous stationery`. This is covered by the top section of the menu.

Labels stationery is continuous, so move the Menu cursor to `Continuous` and press [⊞] to select this. If Single Sheet was selected before, you will see the menu change. The previous version had a Width entry – but the new menu doesn't because it describes Continuous stationery. Continuous stationery can only be used one way round and so its width is irrelevant.

Instead, LocoScript inserts the option to set the Left Offset – ie. the distance the print start position is moved to the right of its normal start position. This is used to ensure that your printer always prints on the part of the continuous stationery you want it to and never, in the case of rolls of labels, on the backing paper – assuming that you always keep the paper holders on the tractor feed unit in the same place.

Setting the Height and Width

The Height is the length of each page, expressed as a number of standard 6-pitch lines. All you have to do is measure a sample sheet of paper in inches, multiply by 6 and that gives you the number of lines. For example, A4 paper is 11⅔ inches long, so its Height is 11⅔ x 6 = 70 lines. The Width of Single Sheet paper is calculated in the same way.

On fanfold paper, what you need to know to work out the Height is the distance between the lines of perforations. This is, in fact, how the paper is specified. The distance between the perforations on 11" continuous stationery is 11". On labels, the distance to measure is that between the top of one label and the top of the next. In our example case, this distance is 1½" so the Height you want is 1½" x 6 = 9 lines. To set this Height, move the Menu cursor to `Height` and type `9`. Then press [ENTER] to 'enter' this new number – in exactly the same way as you 'entered', say, a new First page number in Session 17.

Setting the Left Offset

The Left Offset you set will be the number that gives the distance you want the printing to be displaced in tenths of an inch.

However, finding out the number you need involves some trial and error because it depends on precisely where you have chosen to put the paper holders on your printer's tractor feed unit. There is nothing that you can measure until you try printing out with some initial Left Offset – say, ½" – and then see how you need to adjust this to get the text in the position you want.

In our example case, we want a Left Offset of ½", ie. 5 tenths of an inch. So move the cursor to `Left Offset` and type `5`, followed by [ENTER] to 'enter' this number.

Setting the Top and Bottom Gaps

The Top and Bottom Gaps, as you remember, are the parts of paper on which you don't want LocoScript to try to print – either because the paper isn't held firmly enough by the printer mechanism or to avoid the line of perforations between pages.

With continuous stationery, you have a completely free choice as to how large you make these Gaps. If you want a rule that you never print on either the first or the last three lines of the page, you simply set the Top Gap to 3 and the Bottom Gap to 3. If you want to get as many lines as possible on the page, then you might make both Gaps 0 – though then you run the risk of printing on the line of perforations.

With single sheet stationery, the Top and Bottom Gaps are largely set by the mechanism for feeding sheets of paper through the printer. For example, the PCW printer cannot print on the top six lines or on the bottom three lines of each sheet of paper. Other printers will have similar restrictions.

You still have a great deal of freedom in setting the Top and Bottom Gap – but the Gaps you set must always be at least as big as the Gaps needed by your printer. So when you are setting the Paper Type for single sheet paper used in the PCW printer, you must always make the Top Gap at least 6 and the Bottom Gap at least 3.

For labels stationery, you could set both Gaps to zero because it is continuous stationery but this risks printing on the backing paper. We suggest setting both Gaps to 1 line to prevent this from happening. Set these Gaps in exactly the same way as you have set the Height and the Left Offset – by moving the Menu cursor to the relevant line of the menu and typing the number of lines, followed by [ENTER].

Choosing whether to Ignore the Paper Sensor

The other option you can set is `Ignore Paper Sensor`. The sensor this refers to is built into the printer and it detects the end of the paper. It is very useful when you are using continuous stationery because it stops the printer from trying to print beyond the last sheet of the roll. However, it gets in the way of using single sheet stationery because it signals the end of the paper before you have printed the last few lines of the page.

So, when you are using single sheet stationery, you want to set `Ignore Paper Sensor` (so that the signals from the sensor are ignored) but when you are using continuous stationery, this option should be cleared so that LocoScript responds when the sensor signals the end of the roll. (In fact, on the built-in printer, the Paper Sensor doesn't work at all unless you are using the tractor feed and so it doesn't actually matter what you set for single sheet stationery.)

As the labels stationery is continuous, check that `Ignore Paper Sensor` isn't ticked – because otherwise you will have to be prepared to stop the printer in the nick of time before it prints off the end of the paper. If `Ignore Paper Sensor` has been selected, move the Menu cursor to this option and use the technique of pressing either [C] or the Space Bar to clear it.

Naming the Paper Type

That's set all the details of the Paper Type except one – its name. You must set a name because this is used to identify the Paper Type. This name can be up to 12 characters long and you can use a wide range of characters in it – not just the standard A...Z, a...z and 0..9. For example, you could call the Paper Type you have set up for 1½" labels, `1½" Labels`. (The full list of characters is given in Appendix III.) The name you choose can't have been used already for another Paper Type.

Move the Menu cursor to `Paper`, press [□] to clear away the current name and type your chosen name.

Storing the New Paper Type

When you have set all the details you want, press [ENTER]. This selects the single command option `Create new Paper Type` in the bottom section of the menu. You are then returned to the previous menu, so that you can now create another New Paper Type or inspect the current Paper Types or make some other change to the Settings file (see Session 20).

To leave the Settings menu, move the Menu cursor to the EXIT option (remember, the quick way to do this is to press [EXIT]) and press [ENTER]. LocoScript now displays a special message, which offers to update your SETTINGS.STD file. The point is that you have done the work of creating a new Paper Type and LocoScript has modified the version of the Settings file it is currently using, but if you want to have this Paper Type available the next time you use LocoScript, you have got to update the SETTINGS.STD file on your Start-of-day disc. If you don't, your new Paper Type will be lost.

To take this option, check that you have your Start-of-day disc in Drive A and then press [ENTER]. When you press [ENTER], LocoScript writes the SETTINGS.STD file on the disc in Drive A. (It's up to you to check that you have the right disc in the drive.) You are then returned to the Disc Manager Screen.

Getting rid of a Paper Type

We have just shown you how to set up a new Paper Type – so we will now show you how to delete a Paper Type you don't need. You may need this to keep within the limit of 10 Paper Types. Again, this means changing LocoScript's store of Settings – so display the Disc Manager Screen and bring the Settings menu onto the screen by pressing [f6].

The option you want is `Paper Types` – so move the Menu cursor to this option and press [ENTER], exactly as you did when you were seeing which Paper Types you have. This brings the list of Paper Types onto the screen.

Move the Menu cursor to the Paper Type you want to delete (say, the `1½" Labels` you have just set up) and press [ENTER] – again, exactly as you did when you were

inspecting the Paper Types. But this time when the menu appears, move the Menu cursor to the `Remove Paper Type` option right at the bottom of the menu. Now press [ENTER] to tell LocoScript to go ahead and delete this Paper Type.

You are then returned to the Settings menu, which you can leave by selecting the EXIT option and pressing [ENTER]. Again, you have changed the Settings file and so LocoScript reminds you to save the new version on your Start-of-day disc. You must do this if you are to get rid of this Paper Type permanently.

Special Paper Types

Earlier in this session we set up a document for printing on one of the Paper Types. However, there will be occasions when you want to use some other type of paper. For example, you may want to use special labels stationery (say 3") just for ADDRESS.LST (one of the Example documents). What do you do then?

In fact, the steps are very similar. Again, you need to set up the document for your chosen paper by setting up the Paper Type in the Document Set-up. That done, you can get LocoScript to set up the printer for you when you print the document on the special paper.

Because we set this information in the Document Set-up, the first step is to open ADDRESS.LST for editing and then display the Pagination Screen by selecting the Document Set-up option in the Actions menu ([f1]). Do this now. Once the Pagination Screen is displayed, you have access to the Document Set-up and you also have an array of menus to help you change this. As before, the menu you want is the Page menu (brought onto the screen by pressing [f5]) and the option you want from this menu is `Paper Type`.

What to select from the Paper Types menu?

The first job is to select a Paper Type – just as before. The one to choose is the Paper Type that is most like your chosen paper: then you will have the least to do to make it precisely the Paper Type you want. In particular, it's always better to choose a Single Sheet paper type if your special paper is supplied as separate sheets of paper, but choose a Continuous Paper Type if it is supplied as a continuous roll or as fanfold paper.

The labels we want to set up here are most like the 2" labels so simply move the cursor to `2" labels` and press [⊞] to select it. The option you have selected is a continuous type of stationery – so the part of the menu that deals with whether you want to use the paper Portrait or Landscape disappears.

Now move the Menu cursor to `Show Paper Type` and press [ENTER].

Setting the details

LocoScript now displays the details of the Paper Type you picked out. This gives the current specification for the Paper Type you picked out. To create your special Paper Type, you just change some of these details – exactly as you did earlier in this session when you were setting up a new Paper Type. In this case, simply change the `Height` to 18 lines.

Naming the Special Paper Type

When you create a special paper type, LocoScript automatically gives your special paper type essentially the same name as the standard type you selected to start with, but it adds `?`. So the name of the paper type you have created by changing the specification for `2" labels` would be `2" labels?`.

If you don't want to use this name, you can change it. Just move the Menu cursor up to the `Paper` line of the menu, press [Copy] to clear away the current name and then type your new name. Once again, this name must be no more than 12 characters (letters and digits) long. For example, call the new Paper Type `4in Labels`. LocoScript will still add `?` to this name in the Paper Type menu, just to point out that this is not one of the standard Paper Types.

• If you copy a LocoScript document that someone else has set up on their own machine, they may well have selected a paper type for the document that is standard on their system but not on yours. This is particularly true of documents set up abroad where the standard paper sizes are very different.

This is not the problem that it at first seems. LocoScript simply treats the paper type that's been selected as a Special Paper Type that has been set up for the document. You can set a different Paper Type – or leave it as it is because, as you will remember, it is not essential for the Paper Type set in the document to match the Paper you print on. However, once you select a different Paper Type, you will have to set up the original Paper Type afresh if you need it again. LocoScript only retains the details of special Paper Types while they are actually in use.

Session summary

In this session, you have seen:

- How to set up a document to work with a particular type of paper
- How you can readily get the printer set up for the same type of paper as the document you are about to print
- How to set up the software controlling the printer for a particular size of paper
- What happens when you print a document on a different type of paper to the one is it set up for
- How to set up new Paper Types
- How set to set up a Special Paper Type for a document

Mail merge – I: Producing standard letters and mailshots

If you are using your PCW in a business or to produce letters to the members of a club or a playgroup, many of the documents you produce will be very similar – with just a few specific items like the name and address, the date and amounts of money changing from one version to the next.

It would be a great waste of time and effort to type each of these documents separately – especially as there's no need to do this. For a start, you can always prepare the first letter (or whatever) and then copy it and/or edit it to produce the other letters.

However, the 'Copy and/or edit' approach has its drawbacks. Each copy has to be stored on disc, and in most cases this is, frankly, a waste of storage space. That being the case, you might opt for just one document that you continually edit to create each version you require. But then, not only do you have to be very careful in making the changes each time but you also may have to do much the work all over again if you spoil one or more of the copies you make.

Fortunately, LocoScript has a better solution – which is to use the part of LocoScript called LocoMail. With LocoMail, you just prepare one 'Master' copy of each letter, with specially marked 'blanks' where you want to put name, address, date etc. in the finished versions. Then you ask LocoMail to fill in these 'blanks' with information that you have stored on disc or type in at the keyboard – rather like you would fill in a form.

In this session, we are going to see how to use LocoMail to produce finished versions of an existing 'Master' letter, filling it in both by typing at the keyboard and by taking names and addresses from a data file stored on disc. In the next session, we shall show you how to prepare your own Master documents and data files.

About LocoMail

LocoMail's job is to fill in the special 'blanks' in a Master document, which has been prepared using LocoScript.

It has two ways of working – known as Fill mode and Merge mode. In Fill mode, LocoMail works through your Master document prompting you for such details as names, address and dates, in much the same way as the headings on a form prompt you for details. In Merge mode, LocoMail takes the same sort of information from

details stored on disc and 'merges' this with your document, slotting the information into the right places in the document – rather like you might flick through a card index and copy the relevant details onto the letters you are producing.

These two ways of working are designed for different tasks.

Fill mode is designed for letters and documents that you want to prepare a few at a time. For example, you might receive inquiries from time to time about a particular service your company offers or you might use essentially the same form of agreement for all the contracts you have with your clients. Either of these would be well served by a single standard LocoScript document, personalised with the help of LocoMail in Fill mode.

Merge mode is designed for mailshots – letters you want to send to large numbers of people on your address list. For example, you might want to send details of the annual dinner to all the members of your club. LocoMail used in Merge mode will take the names and addresses you want from your address list and produce individually personalised letters.

The 'blanks' LocoMail fills in

The 'blanks' LocoMail fills in are special pieces of text, which mark the places in the document where you want information to be slotted in.

The pieces of text in the blanks are typed exactly as if they were text in the document themselves. What is special about them is that:

- each 'blank' starts with a `(+Mail)` code and has a corresponding `(-Mail)` code at the end
- the text itself has a special form

Each of the blanks is in fact a LocoMail command, telling it precisely what has to be done in order to insert the correct information. That's why the text between the codes has to have a special form.

There are several different types of LocoMail command, starting with the simple command `(+Mail) ? ;` *prompt* `(-Mail)` – where *prompt* represents a piece of text and `?` and `;` are special characters which must be included in this type of LocoMail command. This command tells LocoMail to stop and prompt you to type what needs to go in at this point in the document by displaying the message *prompt*. For example, the command `(+Mail) ? ; Today's date (-Mail)` tells LocoMail to stop and prompt you with `Today's date`.

Another common command is `(+Mail)` *name* `(-Mail)`. This tells LocoMail to insert the information that you have called by this name. For example, `(+Mail) address (-Mail)` tells it to insert the information you have stored as address. (We will explain how you give names to pieces of information later.)

These are just two of the commonest – and simplest – LocoMail commands. The range of features that can be put into commands is very much more extensive than this. You can even build 'programs' of LocoMail instructions into your document – instructions that do arithmetic, miss out paragraphs under certain circumstances, repeat a section of your LocoMail 'program' many times, etc. etc. However, what we concentrate on here is the simpler commands. For details of the 'advanced' commands, you need to turn to either the LocoScript 2 Reference Manual (published by Locomotive Software) or a book on LocoScript applications.

• The easiest way to understand how the various commands are used is to see examples of them in action, so we shall start by 'Filling' and 'Merging' a pair of ready-prepared Master documents stored on the Examples disc. These are, in fact, two versions of the same letter – one containing the LocoMail commands needed to prompt you to type in names, addresses etc. at the keyboard; the other with the commands to take this information from an address list stored on disc.

Filling in information at the keyboard

The Master document we are going to fill by typing information at the keyboard is called LETTER.1 and it is stored in group 1 (the EXAMPLES group) of the Start-of-day disc. Before we use LocoMail to fill this Master document, we will take the opportunity to look at the commands that have been embedded in the document. You use the LocoScript editor to do this, so the first step is to open LETTER.1 for editing.

```
0.........1.....→.....2.........3.........4.........5.........6.........7.....8.........
        The Widget Company↵
        New Industrial Estate↵
        Little Meadows↵
        Worcester↵
        ↵
        ↵
        (*Mail) ? ; Today's date (-Mail)↵
        (*Mail) ? ; Name (-Mail)↵
        (*Mail) ? ; Address   (-Mail)↵
        ↵
        Dear Customer↵
        ↵
        Please note that we are opening a new direct sales counter to
        provide a better service in Widget supplies.  This will be
        located at:↵
        ↵
        →    52 High St↵
        →    Westington↵
        →    Tewkesbury↵
        ↵
        Please call in and try our new service.↵
        ↵
        Yours sincerely↵
        ↵
```

Note: We are editing LETTER.1 here simply to let us inspect the contents of this Master document. You don't have to edit a Master document before you can use LocoMail to fill in the blanks.

The LocoMail 'Fill' commands

As you see, the document on the screen looks like any other document you might have used LocoScript to prepare, except for the three short sections that are highlighted.

These highlighted sections are the LocoMail commands. As you see, each of them starts with a `(+Mail)` code and finishes with a `(-Mail)` code. (The document has been set up to show codes when you open it for editing, specifically to make these codes visible.) Also, each of them has the form `(+Mail) ? ;` *prompt* `(-Mail)` we introduced above.

By scanning down the document, you can see that LocoMail is going to stop and ask you

- first for today's date – `(+Mail) ? ; Today's date(-Mail)`
- then for a name – `(+Mail) ? ; Name (-Mail)`
- and finally for an address – `(+Mail) ? ; Address (-Mail)`

Before you can fill the document you have to close up the edit and return to the Disc Manager Screen. So press [EXIT], select `Abandon edit` (as you haven't made any changes) and press [ENTER].

Filling in the Master

You now want LocoMail to 'Fill' LETTER.1, so with the File cursor still on LETTER.1, press **F**. (This makes use of the `F=Fill` option on the second Information line of the Disc Manager Screen.) This brings the usual type of Selection menu onto the screen: check that it specifies LETTER.1 from group 1 (the EXAMPLES group) and then press [ENTER].

For a moment, what appears on the screen is identical to what you saw when you edited the document. Then LocoMail starts to process the document – scanning through until it finds the first LocoMail command.

Filling in the date

The first command to be processed is `(+Mail) ? ; Today's date (-Mail)`. When it reaches this point, LocoMail spots from the question mark that it has to wait for you to type something in. And to prompt you, it uses the text after the semi-colon – so what appears on the screen is:

```
(+Mail) Today's date (-Mail)(-Mail)↵
(+Mail) ? ; Name (-Mail)↵
(+Mail) ? ; Address (-Mail)↵
↵
Dear Customer↵
```

(The prompt is highlighted, just like the original command, to make it stand out.)

Type in today's date in any style you want to use. For example, if today is 1st October 1987, you could type `1st October 1987` or `1/10/87` or `1st Oct '87`. If you make a mistake while typing, use the Cursor keys to position the cursor and then just correct the odd character, just as you would if you were typing the date directly into the document.

After you have typed the last letter of the date, press [ENTER]. This signals to LocoMail that you have finished typing the information that is to be inserted here. LocoMail then removes the `Today's date` prompt and goes on to the next 'blank', tidying up as it goes.

Filling in the name

The next 'blank' is the slot for the name of the person the letter is to be sent to. This 'blank' has the same form as the `Today's date` blank and LocoMail treats it in the same way. As before, the `?` in the command tells LocoMail that it has to wait for you to type in the details that are to be inserted here and again it uses the text after the semi-colon as the prompt, giving you `Name` highlighted on the screen.

Type in a name of any length – a single name like `Chris` or a formal name like `Mr A.R.Smythe` or a nonsense name, whatever you like. Anything will do. After you have typed the last letter of the name press [ENTER], to signal to LocoMail that you have finished typing. LocoMail then deletes the prompt and goes on to the next 'blank', again tidying up as it goes.

Filling in the address

The next 'blank' is the slot for the address.

At first sight, it probably seems rather shortsighted to have just `? ; Address` marking the slot in the document for a multi-line item such as an address. Don't you need a separate slot for each line of the document?

In fact, `? ; Address` is plenty as you will see. Try typing the address:

```
1, The Cottages
The Street
Oldville
```

pressing [RETURN] at the end of each line. After you have pressed [RETURN] for the third time, you will have on the screen:

```
↵
1st October 1987↵
Mr A R Smythe↵
(*Mail) Address      (-Mail)1, The Cottages↵
The Street↵
Oldville↵
%-Mail)↵
↵
Dear Customer↵
```

The lines of the address aren't lined up at the moment – but don't worry about this. Just press [ENTER] to tell LocoMail that you have finished typing the address. The Address prompt is now removed and the three-line address you typed is inserted tidily into the document.

```
1st October 1987↵
Mr A R Smythe↵
1, The Cottages↵
The Street↵
Oldville↵
↵
↵
Dear Customer↵
↵
Please note that we are opening a new direct sales counter to
provide a better service in Widget supplies.  This will be
```

The reason this works is that LocoMail waits for you to press [ENTER] and then takes **everything** you have typed and slots it into the document at the point marked by the LocoMail command. You can put anything you like into the text to be inserted – tabs, carriage returns, even word-processing codes. The result will always be exactly as if you had originally prepared the document with the same sequence of text, carriage returns, word-processing codes, tabs, etc.

Finishing the pass

When LocoMail reaches the bottom of the document, it has completed a 'pass' through the document – that is to say, it has worked all the way from the top to the bottom of the document, filling in every slot. It then puts up a menu to ask you what you want to do with the letter you have prepared.



Note: If you don't see this menu, LocoMail has put you straight into its editing mode – because you pressed [ENTER] more times than it expected as you filled in the document: to display the menu, just press [EXIT]. If the menu you see doesn't include either `Print result` or `Save and Print result`, you don't have a printer connected to your PCW.

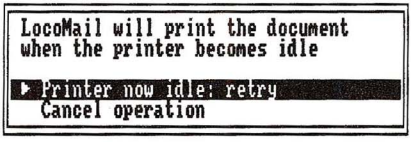
`Edit result` clears away the menu and puts LocoMail into its editing mode, allowing you to modify the filled document before printing and saving it. Choose this option if you want to change anything or add any extra word-processing codes before printing the document out.

When you have finished making these changes, press [EXIT]. This brings the menu back onto the screen, so that you can now go on to print the document, save it etc.

`Print result` prints the document in its current form. Once printed, this version of the document is thrown away: it is not saved on your disc.

Printing starts immediately, unless the printer is already busy printing (or printing is currently suspended – see Session 4). As printing starts, you go on to the next phase of the operation – the next menu (see below). LocoMail doesn't wait for printing to finish before displaying this menu because it can print one version and prepare another at the same time.

If the printer is already busy, you will see this Alert message on the screen:



Normally what you do now is just wait because the moment the printer is free, the message will disappear and you go on to the next phase. But if need be, you can use the options offered in the Alert to tell LocoMail either to retry printing this document or to cancel printing it. To select one of these options, just move the cursor to the option you want and press [ENTER]: otherwise leave the cursor on the Retry option.

`Save result` saves the filled document on disc. The document isn't printed.

Saving the document will take up disc space – which is a valuable commodity, so we suggest you think whether you will really need to have the filled version of the document stored on disc before you select `Save result`.

When you press [ENTER], LocoMail displays the Disc Manager Screen so that you can pick out the group you want to store the document in. Move either the Group cursor or the File cursor to this group and press [ENTER]. You then see a Selection menu, showing the group and drive you picked out.

Type in the name you want to give the document and press [ENTER]. The document is then saved and you go on to the next phase of the operation.

`Save and Print result` combines the actions described above for `Save result` and for `Print result`. The document is first saved as described above for `Save result`; then printing starts – exactly as described for `Print result`.

The moment printing starts you see another menu, signalling the start of the next phase of the operation.

`Discard result` throws away the document you have just prepared. Choose this option when the document isn't how you want and it is easier to prepare the version again than to correct it by editing. You go straight on to the next menu.

`Abandon LocoMail` leaves LocoMail and goes straight back to the Disc Manager Screen. There are no further prompts and no printing occurs.

• For now, select either `Print result` if you would like to have a print out of the finished letter or `Discard result` if you are not interested in keeping it.

Starting the next document

After saving, printing or discarding one finished version of the document, LocoMail then gives you a further choice – to `Fill again` or to `Finish`:



Select `Fill again`. This gives you a fresh infilled version of the Master document, ready for you to work through again putting different information into the various 'blanks'. Use this to practise filling in Master documents with LocoMail.

At the end of each pass through the document, you will be offered the same choice of options – to edit, save, print or discard the filled document. While you are just practising, we suggest you select either `Print result` or `Discard result`.

When you have finished practising, select Finish when this option appears. This returns you to the Disc Manager Screen, ready to go on to the next stage of this session.

Taking information from disc

To show you how to tell LocoMail to take information from a data file stored on disc, we shall now 'mailshot' LETTER.2 to everyone listed in the data file ADDRESS.LST. LETTER.2 is stored in group 1 (the EXAMPLES group) of the Start-of-day disc and again, we will take the opportunity to look at the commands in this Master document. So to start, open LETTER.2 for editing.

```
The Widget Company
New Industrial Estate
Little Meadows
Worcester

(#Mail) Name (-Mail)
(#Mail) Address (-Mail)

(#Mail) ! % Date: Today's date(-Mail)

Dear Customer

Please note that we are opening a new direct sales counter to
provide a better service in Widget supplies.  This will be
located at:

    52 High St
    Westingtone
    Tewkesbury

Please call in and try our new service.

Yours sincerely
```

The LocoMail 'Merge' commands

Again, you can readily pick out the LocoMail commands because these are highlighted.

The 'Merge' commands in this document are:

- `(+Mail) Name (-Mail)` – which tells LocoMail to slot in the Name information in the data file; and
- `(+Mail) Address (-Mail)` – which tells it to slot in the Address information from the file

Notice how these commands are just a one-word description of the information that is to be inserted here. There are no question marks because the information to fill the blanks will come from the data file stored on the disc: a question mark, you will remember, told LocoMail to ask you to type the information. Similarly, there are no semi-colons followed by text because you don't need a prompt to remind you what information is to be slotted in.

'Fill' commands in 'Merge' masters

The fact that you want to take details from a data file doesn't mean that you have to set everything up to take **all** the information from this file. You can still slot in some of the information by typing at the keyboard – just by making the commands marking the slots for this information 'Fill'-type commands. If a command includes a question mark, LocoMail will ask you to type in the information even if every other blank is being filled with information from a data file.

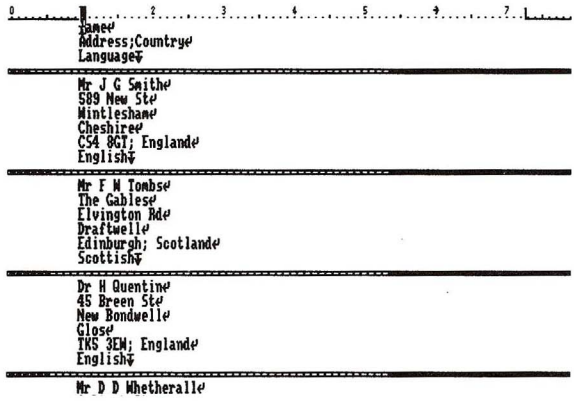
If you look at the slot for the date, you will see that the command used here is:

```
(+Mail) ! ? Date; Today's date (-Mail)
```

The question mark in this command tells LocoMail to prompt you to type the date and as before, the command includes the text for this prompt after the semi-colon. Indeed, we could have used here the same `(+Mail) ? ; Today's date (-Mail)` command we used in LETTER.1. However, the extra ! and the name `Date` give this command a very useful extra feature, as we shall see when we come to fill the letter.

The data file

To see how LocoMail knows which piece of information in the data file is the Name or the Address to use, we need to look at the data file. So stop editing LETTER.2 (press [EXIT], move the Menu cursor to `Abandon edit` and then press [ENTER]) and edit ADDRESS.LST instead. On your screen you should see:



As you see, ADDRESS.LST is divided up into a number of pages. The first page has the words Name, Address, Country and Language; the other pages each contain a 'real' name, address, country and language.

The first page tells LocoMail how to pick out the details it requires from each of the other pages by defining the pattern each page of information has. In other words, it acts as the Record Pattern for other pages – which are the Records. Each record will be used for a separate letter in the mailshot.

This particular Record Pattern tells LocoMail:

1) that each page of the data file (ie. each record) should be divided up into a Name, an Address, a Country and a Language
2) that the information on the first line of each page is a Name
3) that everything between the start of the second line and the semi-colon is an Address
4) that everything between the semi-colon and the end of that line is a Country
5) that everything else on the page is a Language

If you look at the other pages of ADDRESS.LST, you will see that this is indeed the case. The first line is always a name; the addresses vary in length but they always start on the second line and are immediately followed by a semi-colon; the rest of the line after the semi-colon is the name of a country; and the remaining information on the page is the name of a language.

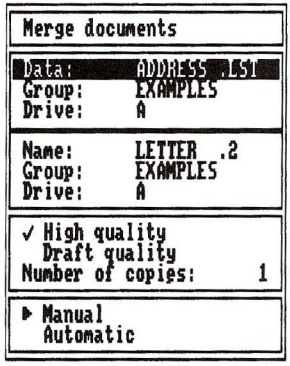
Note: LETTER.2 doesn't use either the Country information or the Language information, but that doesn't matter. Data files can always contain more information than is actually required by the Master document.

- Finish by pressing [EXIT], selecting `Abandon edit` and pressing [ENTER].

Merging the master document and the data

To tell LocoMail to 'merge' information in a data file into LETTER.2, pick out LETTER.2 with the File cursor and press **M**. (This makes use of the `M=Merge`

You then see a message telling you to pick out the data file you want to use. Move the File cursor to ADDRESS.LST and press [ENTER]. LocoScript then displays one of its Selection menus, describing the data file you have selected and the document you are going to merge with this file. Check that it specifies ADDRESS.LST and LETTER.2.



The menu also gives you the choice of `Automatic` or `Manual`. If you choose `Automatic`, LocoMail will fill up and print a letter for every one of the names in the address list without any intervention on your part (except to type any information that's needed at the keyboard and to feed paper into the printer as and when required). Choosing `Manual` means LocoMail will stop at the end of each letter and give you the same choice of printing, saving, editing or discarding the letter as you are given in Fill mode.

Select whichever of style of filling you prefer. (There are four entries in the address list, so selecting `Automatic` would mean using four sheets of paper.) Manual filling is pre-selected for you, so to select this you only have to press [ENTER]. To select `Automatic`, you must move the Menu cursor to this option and then press [ENTER].

For a moment, the letter that appears on the screen looks exactly the same as it did when you edited it. Then LocoMail starts to process it. Sit back and watch the name and the address from the first record being slotted in. (You can check that LocoMail is indeed putting in the correct details by referring back to the picture on page 258.)

However, when LocoMail gets to the third command, it stops and displays the prompt `Today's date`. This is the command that contained the question mark, telling LocoMail to prompt you for the information to be inserted here. Type in the date and then press [ENTER], exactly as you did when you were 'filling' LETTER.1 earlier in the session.

At the end of the pass

When LocoMail has processed all the way to the bottom of the document, that completes a pass.

If you chose `Automatic`, LocoMail will now start to print the filled document and go on immediately to preparing the next version (assuming that there's paper in the

printer and that it is not busy printing something else). If you chose Manual, you will now see precisely the same menu of options that you get at the end of each pass when you are Filling a document. (We suggest you choose either `Print result` or `Discard result` here.)

After saving, printing or discarding one version, LocoMail goes straight on to preparing the next. It doesn't have to stop and ask you whether you want to fill another because it knows to produce one letter for each record in the data file. (If you want to stop producing versions, press STOP, wait for the system to pause and then press STOP again. You will then see an Alert message, offering you the option of Abandoning LocoMail.)

Subsequent passes

Subsequent passes filling the document are very much the same as the first, but with one important difference. Not only can you sit back and watch as LocoMail fills in the Name and Address, you can also sit back as LocoMail fills in the Date. The special form of 'Fill' command with the ! that we used for the Date:

```
(+Mail) ! ? Date; Today's date (-Mail)
```

told LocoMail to remember what you typed the first time as `Date` and then to use this again in subsequent versions of the document.

Practise using LocoMail in Merge mode by watching it fill further versions. (If you run out of versions to prepare, LocoMail will return you to the Disc Manager Screen. If you want, restart the merge as described above.)

Session summary

In this session, you have seen:

- How to 'Fill' a Master document with information from the keyboard
- How to 'Merge' information from a data file into a Master document
- What commands are used where you want to type in details at the keyboard
- What commands are used where information is to be taken from a data file
- What you can choose to do with each version you fill with LocoMail

Session 22

Mail merge – II: Preparing the masters

In the last session, we just used ready-prepared Master documents, complete with all the LocoMail commands needed to create personalised versions of the document. We also merged a ready-prepared data file of names and addresses with one of the Master documents.

However, to use LocoMail for your own work, you will have to create both your own Master documents for LocoMail to work with and the data files you want to use. So that's what we look at in this session.

Preparing a Master document

If you want, you can create Master documents from scratch, typing both the text of the letter and the LocoMail commands you require into a new document. However, it is usually easier to start with a LocoScript document that matches the sort of finished document you want LocoMail to prepare for you – for example, a letter that tells Mr Brown of York where to get his vacuum cleaner fixed – and then convert this to your LocoMail Master document.

Such a document is MASTER.EG, which is stored in group 1 (the EXAMPLES group) on your Start-of-day disc. We shall now convert this to a LocoMail Master document.

Working out what needs to change

The first step in preparing a Master document is to work out what parts of the document will change from version to version.

The easiest way to do this is to go through a print-out of the current document, marking the parts you need to change. Press **P** and print one copy of MASTER.EG: the print-out you get should look like this:

The Midget Company
New Industrial Estate
Little Meadows
Worcester

12 October 1987

Dear Mr Brown,

Thank you for your letter of 15 September. I am very sorry to learn that the SuperVac is not working correctly. I can assure you that our customers have reported very few problems with this product.

We suggest in the first instance that you take it back to our York branch for servicing. Ask to speak to the Service Manager. He has been advised of the problems you have been experiencing.

Yours sincerely

Joan Smith
Customer Services Manager

Starting from the top, the first item to mark is the date – 12 October 1987 – because this will always need to be set to the day you actually send the letter. Then you need to mark the customer's name, Mr Brown, because this will be different on each letter. Similarly, you need to mark the date of the customer's letter (15 Sept), the product which is causing the problem (SuperVac) and the name of the branch that you recommend the customer to take the product to for servicing (York).

This gives us a marked up letter looking like this:

The Midget Company
New Industrial Estate
Little Meadows
Worcester

12 October 1987

Dear Mr Brown,

Thank you for your letter of 15 September. I am very sorry to learn that the SuperVac is not working correctly. I can assure you that our customers have reported very few problems with this product.

We suggest in the first instance that you take it back to our York branch for servicing. Ask to speak to the Service Manager. He has been advised of the problems you have been experiencing.

Yours sincerely

Joan Smith
Customer Services Manager

Deciding on the LocoMail commands

This particular letter is one that we expect you will fill in by typing at the keyboard and so the style of LocoMail commands to use is:

`(+Mail) ? ; prompt (-Mail)`

or for the date (so that you only have to type it once)

`(+Mail) ! ? name; prompt (-Mail)`

You essentially use whatever is appropriate as the *prompt* and as the *name*. However, the *name* can only be a single word made up the letters A...Z (or a...z, as LocoMail doesn't distinguish between upper and lower case letters in names), the numbers 0...9 and the underline character _: it cannot include spaces, hyphens or punctuation characters like , . ( ) or /, and it must start with a letter. The *prompt* cannot include any ↵s.

Putting in the LocoMail commands

To get the results we want, we need to replace each of the specific entries in the sample letter with the appropriate LocoMail command. In other words, we have to delete the current piece of text and insert the corresponding LocoMail command in its place.

To do this, we have to edit the document. For safety's sake, work with a copy of MASTER.EG – so that you can readily go back and work with a fresh copy if something goes wrong. Make this copy now (by using the f3 File menu – see Session 7); then open the copy for editing.

Because we shall be putting in `(+Mail)` and `(-Mail)` codes, it is best to work with all codes shown on the screen – so if necessary, use the f8 Options menu to display codes.

Putting in the 'blank' for the date

The first piece of text to delete is 12 October 1987 and the command to go in its place is `(+Mail) ! ? Date; Today's date (-Mail)`.

Delete `12 October 1987` either by using the Delete keys, [DEL→] and [←DEL], or by cutting it out as a block (see Session 6). Be careful just to delete this text: in particular, don't delete the `(RAlign)` code at the beginning of the line or the ↵ at the end of the line. We want the `(RAlign)` code to ensure that the dates you enter will be positioned on the righthand side of the letter under the address, and we want the ↵ at the end of the line to keep the separate line for the date.

Now insert the LocoMail command we are going to use for the date between the `(RAlign)` code and the ↵. Press [⊞] followed by **M** to put in the initial `(+Mail)` code; type `! ? Date; Today's date`; and then press [⊟] followed by

M to put in the `(-Mail)` code. **Note:** The Mail codes can only be inserted by using these keystrokes (or the corresponding Set and Clear menus). They don't appear in any of the menus.

```
(RAlign)                                        Worcester↵
↵
(RAlign)                    (+Mail)? Date; Todays's date(-Mail)↵
↵
Dear Mr Brown,↵
```

You have now inserted your first LocoMail command.

Putting in the other 'blanks'

The next LocoMail command to insert is the one to replace Mr Brown. So delete Mr Brown as before and put in instead:

`(+Mail) ? ; Customer's name (-Mail)`

Press [+] followed by M to put in the initial `(+Mail)` code; type `? ; Customer's name`; and then press [-] followed by M to put in the final `(-Mail)` code.

The remaining three commands are inserted in the same way. They are:

`(+Mail) ? ; Letter date (-Mail)` – to replace 15 June

`(+Mail) ? ; Product (-Mail)` – to replace SuperVac

`(+Mail) ? ; Local branch (-Mail)` – to replace York

In each case, move the Text cursor to the text that is to be replaced, delete the current text and then type in the LocoMail command. When you have put in the last command, you have created your Master document. Save it on disc by pressing [EXIT] and then [ENTER].

Testing the Master document

The way to test any Master document – both ones that are designed to be filled from the keyboard and ones that are designed to be merged with data stored on disc – is to fill it from the keyboard a couple of times. (*When you fill a document that is designed to be merged, LocoMail simply asks you to type in the details that it would normally take from the data file.*)

So to test out the MASTER.EG that you've created, pick it out with the File cursor and then press **F** followed by [ENTER] to start LocoMail filling it.

If you see an Alert message like this (right) your document contains at least one LocoMail command that is not as specified here. You can usually work out which command is wrong by looking to see how far LocoMail had got before this message appears. So when you have seen this, press

```
ERROR in: LocoMail

LocoMail command syntax error

▶ Abandon LocoMail
  Discard document
  Edit document
```

ENTER to abandon LocoMail and return to the Disc Manager Screen. Next open the document for editing, check and correct the LocoMail commands, and then try again. Check in particular the Mail codes you have in the document: there should be no `(+Mail)` and `(-Mail)` codes in the document other than the ones starting and finishing your LocoMail commands.

If you get into difficulties, abandon this version of the document and start over again with a fresh copy of MASTER.EG.

Setting up a data file

Earlier in this session, we produced a number of letters by merging the names and addresses in ADDRESS.LST with LETTER.2. Finally in this session, we shall create a list of names and addresses of our own to merge with the Master document.

Identifying the data you'll need

Before you create this list of names and addresses, you need to know what information LETTER.2 needs to take from the data file. The first thing to do, therefore, is to edit LETTER.2 to see what LocoMail 'Merge' commands it contains.

```
The Widget Company
New Industrial Estate
Little Meadowse
Worcester
(+Mail) Name (-Mail)
(+Mail) Address (-Mail)
(+Mail) 1 2 Date; today's date(-Mail)

Dear Customer

Please note that we are opening a new direct sales counter to
provide a better service in Widget supplies. This will be
located at:

    52 High St
    Westingtone
    Tewkesburye

Please call in and try our new service.

Yours sincerely



J Wendlinge
```

The two 'Merge' commands this document contains are:

```
(+Mail) Name      (-Mail)
(+Mail) Address   (-Mail)
```

So each record of our data file has to contain a Name and an Address. (It can also contain more information than this – but that needn't concern us here.)

Planning the Record Pattern

Planning the record pattern for the data file involves:

- deciding which order you are going to put the pieces of information in each record
- and deciding what you are going to use as the signal that tells LocoMail where each piece of information ends

Deciding on the order is usually very easy because, as a rule, you just choose the most natural order. In this case, that is `Name Address`. *(You don't have any choice here as to what these items of information are called because that is already fixed by the Master document. The Record Pattern has to use exactly the same names as the Master document, spelt the same way as well.)*

Deciding on the signals (or 'Separators') to use is more complex. The signals you can use are either punctuation marks like , . ( ) ! ; etc. or the start of a new line (usually represented by ↵). What you have to select is a signal that will never appear in the piece of information it will mark the end of. It is no good, for example, choosing , as the signal for the end of pieces of information that could contain commas because LocoMail will think it has come to the end of the information when it meets the first comma.

In the data file we are preparing here, we shall have:

Names like: `Tim Smith, J.B. Harrison` and `John Baker-Smythe`

Addresses like:
```
1, The Mews
Cottage Row
Newville
Glos
```

The Separator we shall use for `Name` is ↵ – because names never have a new line in them. However, we can't use ↵ to mark the end of an address because addresses are typically written over a number of lines and so contain a number of Carriage Returns. They also can contain commas and full stops. What we shall choose instead is the End-of-page character ↧ – partly because we don't expect to include ↧ in any of our addresses, but mainly because the address is the last item in the record. ↧ is one of the signals we can use to mark the end of a record.

So the Record Pattern we are going to give our data file is:

`Name` ↵ `Address` ↧

This tells LocoMail to take everything up to the first ↵ as a Name and everything else in the record as an Address.

We shall now see what this Record Pattern looks like when we put it in a data file and what the data records have to look like to match the pattern.

Creating the data file

To create the data file, we simply create a new document in the usual way and then type in the data we need.

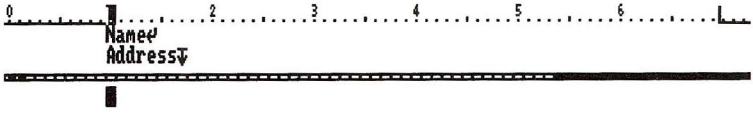
First put in the Record Pattern

The first thing to type into the new blank document is the Record Pattern. This must come first because LocoMail has to read the pattern before it can pick out information from the rest of the data file. So type:

```
Name ↵ Address ↓
```

(You type a ↓ by holding down [ALT] and pressing [RETURN].)

You should now have the following first page:



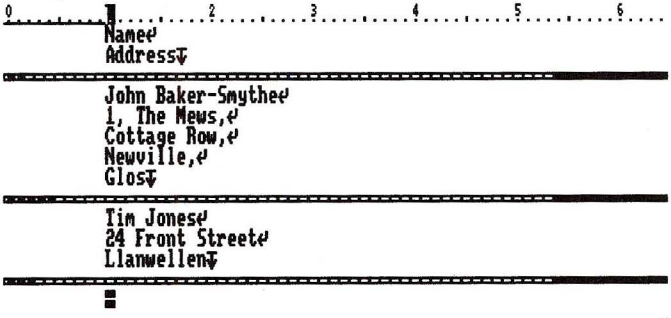
Follow the Record Pattern with the data.

Then type the data

To start the data file off, type:

```
John Baker-Smythe ↵
1, The Mews, ↵
Cottage Row, ↵
Newville, ↵
Glos. ↓
Tim Jones ↵
24 Front Street ↵
Llanwellen ↓
```

By now you should have the following on the screen:



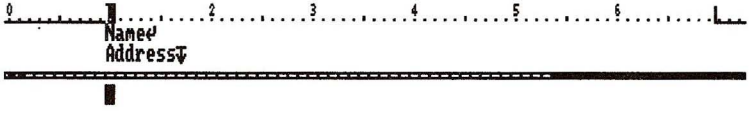
Now type in some other names and addresses. Remember to type each name on the first line of the page and to put an End-of-page character immediately after each address.

Testing the data file

When you have finished typing names and addresses, save your new address list and then try using it with LETTER.2. Move the File cursor to LETTER.2, press **M**, then move the File cursor to your new address list and press [ENTER] – and then press [ENTER] again when you have checked that you selected the right files. (This is exactly the same series of steps as you took to merge ADDRESS.LST with this master document in the last session.)

If you have prepared the datafile carefully, LocoMail should now start filling LETTER.2 with your new names and addresses, record by record. If instead you see an Alert message on the screen or LocoMail fills the letter but gets the information in the wrong places or only puts one line of the address in the address slot, abandon LocoMail and edit your new address list.

First check the first page. This must be:



ie. `Name` and `Address` must be spelt correctly, there must be a ↵ after the word `Name` and there must be a ↓ after the word `Address`, but there mustn't be any extraneous characters (commas, full stops, extra ↵s, etc.) or codes in the Record Pattern. (Extra spaces around names and separators, however, don't matter.)

Then check that you have each name in the data file on the first line of a new page and that you have a ↓ at the end of each address. Once you have these right, your data file will work correctly with LETTER.2.

An alternative approach

Planning a Record Pattern is not easy when you are new to LocoMail. If you have an existing data file that works with your Master document, then it is often best to simply copy the Record Pattern from that file to use in the new file. So instead of designing a new Record Pattern, we could have just copied the Record Pattern from ADDRESS.LST, ie:

```
Name ↵
Address ; Country ↵
Language ↓
```

and put that at the top of the new data file. Then you would type in your own information, following the rules laid down in this Record Pattern – ie. ↵ after each name, ; after each address, ↵ after each country and ↓ after each language.

It seems from this that you would have to type a country and a language for each data record even though this isn't information that you are going to use. In fact, you don't have to type any more information than you want. Make sure that you have all the separators you need up to the last item you are interested in (ie. the address), and then put ↓ after this last item. The remaining items will automatically be set to null – that is, no characters at all.

You can vary the amount of information you put into each record, so you could finish up with a data file like this:

```
Name↵
Address;Country↵
Language↓
Mr J G Smith↵
589 New St↵
Mintleshaw↵
Cheshire↵
CS4 8GT;↵
English↓
Mr F W Tombs↵
The Gables↵
Elvington Rd↵
Draftwell↵
Edinburgh↓
Dr H Quentin↵
; England↵
English↓
Mr D D Whetherall↵
;England↓
↵
589 New St↵
Mintleshaw↵
Cheshire↵
```

This is the data file ADDRESS2.LST. Study it and the Record Pattern, and work out what information you think it contains. Then merge it with LETTER.2 and see if you were right!

Converting an existing data file

So far, we have only talked about data files that you set up using LocoScript. However, many data files are set up by other programs – for example, accounts programs or order-processing programs.

LocoMail can handle these as well. All it needs is an ASCII version of the data file, stored on a disc that you can use in your PCW, and a separate LocoScript document containing the Record Pattern.

The ASCII file that is required is very like the ASCII versions of documents for incorporating into LocoScript documents that we described in Session 15. It should be possible to set up the file you need from your accounts program (or whatever). The more complex task is to sort out how the information in the data file is divided up at present and then create a Record Pattern that fits both the existing data file and the needs of the Master documents you want to use the data file with.

Preparing the Record Pattern

The data file will already be divided up into records and each record will be divided up into separate pieces of information. In all likelihood, the characters being used as separators (ie. as markers showing where one piece of information ends and the next begins) will be characters like , . and ;. For example, a data file that has been prepared by an accounts program for use with Wordstar's Mailmerge program typically has commas between the separate items of information. These characters can readily be picked out as separators by LocoMail.

To work out the Record Pattern to use with this data file:

1. Find out how the data file is laid out at present.

A good way of going about this is to print out the first few records of the data file. For example, you might get a print out like this:

```
Jack Gold, Mon Repos, 22 Dunbar Close, Oldville,,76
Joe Smith, The Cottages, Kingston upon Hull,,HU32 0XX,2
```

Obviously, in this data file, each line is a separate data record and commas are used to separate the pieces of information in each record.

2. Give names to each piece of information in a record, using the names you use in your Master documents. If there are any pieces of information in the record that you don't use, give these names as well.

The names you choose must be single 'words', made up of the letters A...Z (or a...z), the numbers 0...9 and the underline character _, which start with a letter. They must not include spaces, hyphens, or punctuation characters like , . + / ( ) etc.

In our example, you might match names to the items of information as follows:

name	addr1	addr2	addr3	postcode	rating
Jack Gold	Mon Repos	22 Dunbar Close	Oldville		76
Joe Smith	The Cottages	Kingston upon Hull		HU32 0XX	2

Remember when you choose a name to represent information you don't want to use, to select a name that is different from any other name that you use in the Master documents.

3. Your record pattern is simply these names, each followed by the separator character used in the datafile (*including the ↵ at the end of the line*) and finished by ↧

The ↧ is known as the Record Pattern Terminator, because it marks the end of the Record Pattern.

The Record Pattern for our example file would be:

```
name, addr1, addr2, addr3, postcode, rating ↵
↧
```

4. Store this pattern as a LocoScript document.

Using a data file with a separate Record Pattern

Obviously, having the data and the Record Pattern in separate documents means that you will have to do something slightly special to tell LocoMail to start merging the information in the data file into a Master document.

As before, you start the process by picking out the Master document you want to fill with the File cursor and pressing **M**. But then, instead of picking out the data file next, you now pick out the document containing the Record Pattern and press [ENTER].

LocoMail then puts up the Selection menu, showing you the details of the documents you picked out and offering the choice of Manual or Automatic merging. Select the merge mode you want, and then press [ENTER].

LocoMail will then display a message, telling you to pick out the data file you want to use. This is the time to move the File cursor to the data file and press [ENTER], and then [ENTER] again, when you have checked the details in the short Selection menu that appears.

The Master document is then displayed on the screen, and LocoMail starts filling it with information from the data file.

Session summary

In this session, you have seen:

- How to set up a Master document, complete with the Locomail commands you need
- How to use LocoScript to set up a data file to use with one or more Master documents
- How to merge information from a data file generated by your accounts program, for example, in a LocoMail Master document

IMPORTANT: Data Protection Act 1984

Information about private individuals that you process on your computer may have to be registered under the Data Protection Act 1984.

Information that is only used in connection with personal, family or household matters or held only for recreational purposes is exempt, but information that is held and processed for any other purpose, for example in connection with your business or profession, should be registered.

Guidelines giving full details are available from HM Stationery Offices or from:

The Office of The Data Protection Registrar
Springfield House
Water Lane
Wilmslow
Cheshire
SK5 5AX

Session 23

Using different printwheels and different printers

We turn now to one of the most powerful aspects of LocoScript 2 – the fact that you aren't tied to using one particular printer and one particular printwheel but can choose which printer and printwheel to use – even for individual documents.

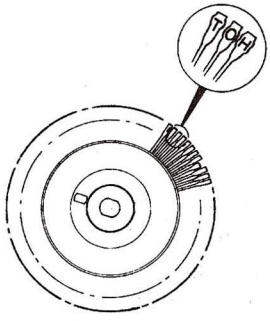
If you only have one printer – the printer that was supplied with your PCW – and only use England-style printwheels, you need never worry about this side of using LocoScript 2. All the software and all your documents will automatically be set up for the standard printer and an England printwheel without you doing anything. What we describe here is only important when you want to use, say, a Swiss-French printwheel (for accented characters) or you have a different printer you want to use. (You can have the two printers connected to your PCW at the same time and swap between them, if you want.)

First, some background information on printers.

About printers

There are lots of different printers that you could use with your PCW machine. These printers are generally one of two types, depending on the way they produce characters. (Laser printers with a suitable compatible mode can also be used.)

Daisy-wheel printers, like the one supplied with your PCW, take all their characters from a printwheel, which is hit with a small hammer every time you want to print a character. The printwheel has a number of 'petals', each with a different character on it, and looks rather like a daisy – hence the name 'daisy-wheel printer'. Dot-matrix printers produce characters by making patterns of dots on the paper.



However, different dot-matrix printers and different daisy-wheel printers have different software driving the way they work. Moreover, different printwheels have a different set of characters on the ends of their petals and even where they do have the same characters, the characters won't take up the same space when they are printed.

So before you can print a document on any printer, LocoScript 2 needs to know:

- how the printer works
- which characters the printer can produce, and in particular the order the characters are on the printwheel: this is known as the 'Character Set'
- details of the 'Style' of these characters – in particular, the Character Pitch they were designed to be used at

The first step in using another printer is, of course, to ensure that you can connect it to your PCW. If the printer uses an IBM-style Centronics interface, you should be able (with the right cabling) to connect it to the 'Parallel Printer' connector on the back of your PCW. Otherwise you may have to fit a serial/parallel interface to your PCW – for example, the Amstrad CPS8256 serial/parallel interface. Again you will have to ensure that you have the right cabling to link the printer to this interface. (For further information, see Part I, Appendix I 'Expanding your PCW' and the user guide supplied with the printer itself: if in doubt, consult your dealer.)

This is the 'Hardware' side of the operation – and once you have a suitable interface and the right cabling, that's basically coped with. The more subtle part of the job is to set up LocoScript 2 and your documents so that they use this other printer – and that's what we look at here.

About Character Sets

A Character Set is a list of all the characters that are available in the set, together with the width information needed so that characters are positioned correctly when you want proportionally-spaced text.

The characters that are in a particular Character Set vary from printer to printer and, in the case of daisy-wheel printers, they may vary from printwheel to printwheel. A number of Character Sets are based on the standard ASCII characters – `a...z`, `A...Z`, `0...9` and a range of common punctuation marks. Others have 'specialist' uses – for example, there are some Character Sets that have been specifically designed for technical reports and others for typing in foreign languages.

It's obviously impractical to talk about a Character Set by listing the characters it contains: so instead you just use its name. These names are reasonably standardised, so the characters in one 'ASCII' Character Set will be very much the same as those in another 'ASCII' set but different from those in an 'English ASCII' set. (The ASCII character set has a # and no £, whereas the English set has a £ and no #.) However, there can still be some differences – in particular, the **number** of characters in the set can vary.

With a daisy-wheel printer, you can work with a number of different Character Sets, but a dot-matrix printer will often only have one Character Set, corresponding to the full range of characters that can be printed. Sometimes, though, you will be offered two Character Sets – one being the set of 'standard' characters and the other being an 'extended' set, often including some accented characters.

You will usually have to turn to the manual on your printer to find out which characters you will be able to print. The characters available when you use England printwheels on the supplied printer are listed in Appendix III.

About Character Styles

Each Character Set may have a number of different Character Styles associated with it. Each Character Style identifies the design of the characters – in particular the pitch they were intended to be used at (though not necessarily the only pitch that they can be used at). LocoScript needs to know the design pitch so that it can ensure that the left and right margins are straight. So Character Styles have two-part names, made up of a descriptive title and the design pitch.

On a daisy-wheel printer, the Character Set essentially defines the range of characters and the order of the characters on the petals. However two different printwheels that have this Character Set will be described by different Character Styles – partly because the characters they produce look very different but mainly because they will have been designed for use at different pitches. So your wheels might have names like `Prestige 12` and `Courier 10` – `Prestige` and `Courier` describing the look of the characters, and `12` and `10` defining the design pitch.

Which Character Style to use on your daisy-wheel printer depends on the documents you want to print. For example, if you have both a 10-pitch and a 12-pitch printwheel, it's best to choose the 10-pitch wheel for documents that use 10-pitch characters and the 12-pitch wheel for documents that use 12-pitch characters. (If your text uses both 10 and 12-pitch characters, using a 10-pitch wheel may make the 12-pitch sections look squashed but using the 12-pitch wheel may make the 10-pitch sections look too widely spaced. Choose whichever you feel looks better.)

On a dot-matrix printer, each Character Style within a Character Set will give you characters that look different. There is no need for separate Character Styles covering different pitches because it can work out by scaling all the characteristics of the characters it needs to position them accurately. All you ever need to choose is the style of characters that give your document(s) the look you require.

LocoScript's Knowledge of Printers

The details of how the printer works, the Character Set and the Character Style are stored in special Printer files on your Start-of-day disc, which are automatically copied to Drive M when you load LocoScript 2.

The information about any printer can be stored all in one or more files. The main file has the name extension .PRI. For example, the main file for the supplied printer is called PCW9512.PRI and the (only) one for the Amstrad DMP range of dot-matrix printers is called DMP.PRI. LocoScript can handle up to four different sets of printer information at the same time – should you have four different printers!

Other printer files have the same main part of the name as the .PRI file but have different extensions. For example, the main file for Diablo 630-compatible daisy-wheel printers is called D630.PRI, and any associated files would have D630 as the first part of their name.

You tell LocoScript which printer, etc. you want to use by picking out their names. The names of the Printers, the names of their Character Sets and the names of the Character Styles are taken from the Printer files on disc and held in SETTINGS.STD (LocoScript's store of Settings) alongside the details of the Paper Types (see Session 20).

The name LocoScript records for the printer is simply the main part of the filenames of the various printer files. So, for example, LocoScript calls the built-in printer PCW9512 and it calls a 630-compatible printer D630. The names it uses for the Character Sets available for each printer and for the Character Styles associated with these Character Sets are taken from the Printer files themselves.

Introducing new Printers and Printwheels

Introducing a new printer or a new printwheel is really very simple. OK, in the case of a new printer or of a printwheel that uses a special Character Set, you may have to acquire Printer files specifically for your new printer/printwheel but setting up LocoScript 2 to use these files is really quite straightforward. If the printwheel uses the England or the Swiss-French Character Set you don't even need any additional Printer files.

The only potential problem is acquiring the files themselves. Unfortunately, it isn't possible here to tell you precisely what you will require for your **particular** printer – there are just too many different printers on the market for that. But this is exactly the sort of information that the dealer who supplied your printer should know – so ask him. He should also be able to provide you with all the Printer files you need. Just make sure that he understands that you want to use your printer with LocoScript 2 and that he knows you have a PCW9512.

Ideally, the Printer files you use should be the ones specifically intended for your printer. If this printer is a daisy-wheel printer, you also need one or more Printer files that describe the Character Sets associated with the printwheels you have for this printer. These files will enable LocoScript to use all your printer's features as it prints out your documents. They also ensure a proper match between the characters you enter into the document and the ones printed in the finished document, and correct spacing of the characters in proportionally spaced text.

If no Printer files are available specifically for your printer, do not despair. You may well be able to use the Printer files designed for a similar printer with little or no loss of performance. In particular, if your printer is compatible with a Diablo 630 or an Epson FX-80, you may be able to use the D630 or DMP Printer files supplied on your LocoScript 2 disc.

However, there are some limitations in using these files:

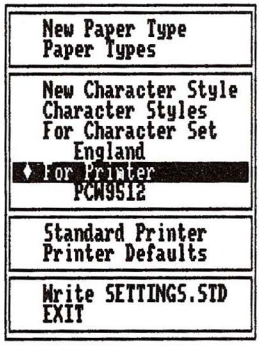
- if your printwheels have more than 96 petals, you won't necessarily be able to make use of all the characters on your wheels
- the widths and positions of special characters like ¼ are not the same on every printwheel, and so simply using the supplied Printer files can mean that in order to print £, say, you actually have to put { into your document
- you may also find that the letters won't be spaced properly in proportionally-spaced text
- you may not be able to use all the pitches and styles that your printer can do
- NLQ printing may not be available with pitches and styles (dot-matrix printers)

If you just use the standard range of ASCII characters (a...z, A...Z, 0...9 and standard punctuation symbols), these 'deficiencies' should not affect your documents. However, if you do have 100-petal wheels, use non-ASCII characters and/or use PS wheels and slight inaccuracies in the positioning of characters do matter to you, you need a Printer file containing the correct details for the printwheel you are using. This file can readily be prepared with the aid of the Print Wheel Support Kit, available from Locomotive Systems.

Introducing new Printer Files

Once you have suitable set of Printer files, copy the relevant Printer files to the first group on your Start-of-day disc and, as you will normally want to use the printer immediately, to the first group on Drive M as well. (Copying the files uses the techniques described in Session 7.) Once you have copied these files, stay in the Disc Manager and press [f6] to bring the Settings menu onto the screen.

All you need to do once you have brought this menu onto the screen is move the Menu cursor down to the EXIT option (by pressing [EXIT]) and press [ENTER]. LocoScript then updates the 'working' copy of the Settings file, adding your new printer to the list of printers, and offers to re-write the corresponding file on your Start-of-day disc if you insert this in Drive A. Writing the new version of the Settings file on your Start-of-day disc ensures that your new printer/printwheel will automatically be available in future.

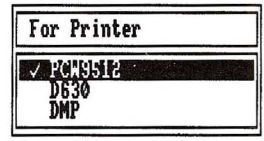


Introducing a new Printwheel

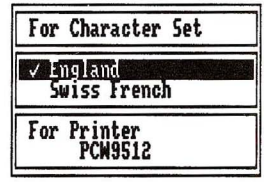
Each time you buy a new printwheel for your printer – whether an England printwheel or some other type of printwheel (say, Swiss-French) – you have to add details of this new printwheel to LocoScript's store of Settings, which it records in the SETTINGS.STD file. This is an easier task than it may sound.

To start, display the Disc Manager Screen, insert your Start-of-day disc, press [f7] to signal the Disc change and then press [f6] to bring the Settings menu onto the screen.

The middle part of this menu gives the name of the printer and the Character Set LocoScript is currently set up for. If this isn't the printer you have bought the wheel for, select `For Printer` and press [ENTER]. Do this now. LocoScript then displays a complete list of the printers it currently knows the names of. Select the printer you want (`PCW9512` if your new wheel is for the built-in printer), press [⊞] and then press [ENTER] to return to the Settings menu.



Now select `For Character Set` and press [ENTER]. This time you see a list of the Character Sets associated with this printer. The Character Set you require is the one for your printwheel. For example, if your new printwheel is an England printwheel (like the supplied printwheel), make sure that the Menu cursor is on `England` and press [⊞]. If it is a Swiss-French wheel, move the Menu cursor to `Swiss-French` instead. Press [ENTER]. (If the Character Set you want isn't listed, you really need more Printer files but you will probably be able to use one of the supplied files for ASCII characters.) LocoScript then returns you to the Settings menu. This now shows the names of the printer and the Character Set you have just picked out.



Note: This just gives the **names** of the Character Sets. The list of characters you can print using a particular Character Set should be given in the literature supplied with the Printer File containing this Character Set.

You are now ready to start telling LocoScript about your new printwheel. Select `New Character Style` and press [ENTER]: a menu like this will then appear:



This menu is all ready for you to type in the Name of your new printwheel and set its Size. The details you need to type are on the wheel itself, which will have something like `Elite 12` written on it. Here, the Name of the wheel is `Elite` and its Size is `12`.

Typically, you just copy the name quoted on the printwheel as it is but you will have to shorten any names that are more than 12 characters and you may have to change foreign names. `A...Z, a...z, 0...9`, all the Greek letters and many accented characters can be used in these names – but not every character you can type. In particular, you can't use Cyrillic letters. (The full list of characters that can be used is given in Appendix III.)

Type the name with the menu cursor on line below `Character Style`; then move the cursor down to the next line of the menu, type the Size you want (`12`) and then press [ENTER].

Once the name and size are set up, press [ENTER] to select the `Create new Style` option in the bottom section of the menu – or press [CAN] to abandon setting up this new Style. When you press [ENTER], LocoScript automatically updates the SETTINGS.STD file on Drive M and returns you to the Settings menu. If you have another new wheel to install on your system, you could do this now.

When you have finished, move the Menu cursor down to the EXIT option – as always, the quickest way of doing this is to press [EXIT] – and then press [ENTER]. LocoScript now offers to update the SETTINGS.STD on your Start-of-day disc – just as it did when you added the details of a new Paper Type in the last session. If you want it to do this now, make sure that you have your Start-of-day disc in Drive A and then press [ENTER].

Note: As always, remember to update the SETTINGS.STD file on your Start-of-day disc. If you don't, LocoScript will lose the information about your new printwheel the moment you switch off or reset your machine and you will have to set up these details all over again.

Using a particular printer/printwheel

Setting everything up so that LocoScript prints out your document on a particular printer is very like setting everything up so that your document is printed on a particular size of paper (see Session 20).

Ideally, you should ensure that each document is correctly set up for the printer, Character Set and Character Style (ie. for the printwheel) that you want to use for that document. Specifying these details correctly means that LocoScript calculates proportional spacing from the right information on the individual character widths. You don't have to worry about setting up the printer in the same way because LocoScript can prepare the printer just before printing the document, in exactly the same way as it can set the printer up for the type of paper you want to print the document on.

Just as you may want to produce draft copies of a document on different paper because it is cheaper, so you may want to produce draft copies on a different printer because it is faster. For example, using a dot-matrix printer will probably be very much faster than using the daisy-wheel printer you want to use for the finished version.

When you wanted to use your cheap drafting paper, you set up the printer for this paper and then told LocoScript to use this paper rather than the paper specified in the document. When you want to use the faster printer for drafting, you set up LocoScript ready for this printer and then tell it to use this printer rather than the one

specified in the document. The steps you take in both cases are essentially the same. Justification may not be perfect on the 'alternative' printer, but that shouldn't matter for your draft versions.

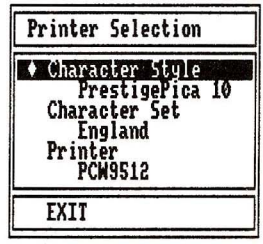
We describe here how to set up both a document for a particular printer and LocoScript for a particular printer. The similarity between this and setting up documents and the printer for particular sizes of paper should be obvious.

Setting up a document for a particular printer and printwheel

To show you how to set up a document for your chosen printer and printwheel, we shall now go through the steps needed to set up MAIL.TXT (one of the Example documents on the Examples disc) for the standard Diablo-630 compatible printer and an UK ASCII Elite 12 printwheel. (At the moment, it is set up for the PCW printer.)

The Printer the document is prepared for is one of the pieces of information recorded in Document Set-up so the first step is to open `MAIL.TXT` for editing. Once the document is on the screen, press [f1] and select `Document Setup` in the usual way to get access to the Document Set-up (see Session 18).

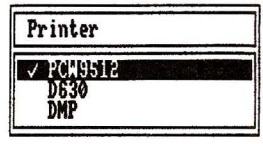
Once the Document Set-up Screen is displayed, you have an array of menus to help you change the Document Set-up. The one you want here is the Printing menu (which, you will see, is brought onto the screen by pressing [f6]). The Printer Selection menu that appears is a mixture of options that you can use to change the Printer details and the current selection, shown immediately below each option.



The Printer Selection menu is another of the Commands menus in which the current selection is marked by a diamond rather than an arrow. The reason for this is that selecting a different printer automatically changes both the Character Set and the Character Style (and similarly, selecting a different Character Set changes the Character Style) and so it is important to return to this menu and at least check that your document is being set up for the right Character Set and Character Style.

Selecting the Printer

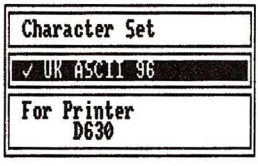
The first job is to tell LocoScript which printer you want to use – so the option to select is `Printer`. Press [ENTER] and a new menu appears.



The Printer menu is essentially just a list of all the printers that LocoScript currently has full information on, with a tick beside the printer LocoScript is currently set up for. If LocoScript doesn't have information on the current printer, it will still be shown but with a ? beside it. (The menu may look familiar if you have introduced a new printwheel on your system.)

The Printer menu is a Settings menu, so to tell LocoScript that you want to set the document up for a 630-compatible printer, you just point to `D630` with the Menu cursor and press [⊞]. When you have selected the printer you want, press [ENTER]: LocoScript then returns you to the Printer Selection menu, so that you can check and if necessary change the Character Set and Character Style that you have now been given.

Selecting the Character Set

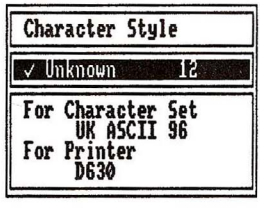


Now move the Menu cursor to `Character Set` and press [ENTER]. The menu that appears is very much like the last, except that it shows a list of the different Character Sets that are available for your chosen printer – each Character Set representing a different combination of characters. The printer that these Character Sets are available on (ie. the printer that's currently selected) is shown at the bottom of the menu. (Again, the menu may look familiar if you have introduced a new printwheel on your system.)

Again, the current selection (in some cases, the only choice) is marked with a tick. When you have just set a different printer, this will simply be the one at the top of the list – that's why it's important to follow your selection of a printer by selecting the Character Set.

Again, the menu is a 'Settings' menu – so to select the UK ASCII96 Character Set, say, move the Menu cursor to `UK ASCII96` and press [⊞]. Now press [ENTER] – to return to the Printer Selection menu, so that you can now check and if necessary change the Character Style that you have been given.

Selecting the Character Style



This time move the Menu cursor to `Character Style` and press [ENTER]. The menu that appears displays the different Character Styles that are available for your chosen printer and Character Set (shown at the bottom of the menu). The number given alongside each style name tells you the Character Pitch the character style was designed for.

Again the menu works in exactly the same way as the previous ones – with the current selection marked with a tick, but as you have just selected a new Character Set, this is simply the Character Style at the top of the list.

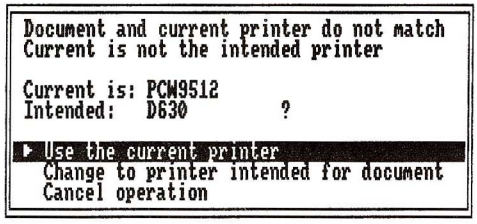
Select the Character Style you want as before – by pointing to it with the Menu cursor (in this case, we want to select `Elite 12`). Press [ENTER] and then [EXIT] and [ENTER] to return to the document itself.

These steps have set up MAIL.TXT for printing on a 630-compatible Printer. We will now show you what happens when you want to print this with LocoScript set up, as it is at the moment, for the built-in printer.

• When you just want to set up the document for a different printwheel, you don't need to select the printer again – just the Character Set or just the Character Style. In this case, you still use the Printing menu but this time you select the Character Set or the Character Style option as appropriate. You don't have to start by selecting the printer.

Printing the document

Immediately after it is loaded, LocoScript is set up for a particular printer. At the moment, this is the built-in printer. However, when you come to print a document that has been set up for a different printer you have a choice – either to tell LocoScript to prepare itself for printing on your chosen printer or to tell it to go ahead on the current printer. You are offered this choice through the Alert message that appears when you start to print the document – as you can see by trying to print MAIL.TXT.



If the printer you set the document up for is attached to the machine, you can select `Use the printer intended for the document`, LocoScript will then display a special menu that specifies the details that you would then be setting, and gives you the option of either proceeding or cancelling the operation altogether. To proceed, just press [ENTER] LocoScript then sets itself up for this printer and then print the document on the 'right' printer. This printer then becomes your 'current' printer – until you either load LocoScript 2 again or set it up to use another printer.

But if you want to draft your document on some other printer, you can do this as well – by selecting `Use the current printer`. LocoScript will then print your document on the current printer – but with some compromises in the quality of the result. For example, the righthand edge of justified text won't necessarily be straight. Select `Use the current printer` now, and you will see the type of result you can expect.

IMPORTANT: You should always check that the printer that LocoScript is expecting is actually connected to your machine and, if this is a daisy-wheel printer, that you have the correct printwheel on the printer. LocoScript has no way of detecting which printer is attached and so will assume that it is the correct one. If you don't check, you might just print rubbish.

Preparing LocoScript for a particular printer

If the printer you want to use is neither the one LocoScript is currently set up for or the one specified in the document, then you need to set up LocoScript yourself for your chosen printer. The steps are very like the ones you use to set up the printer for a particular Paper Type, as we shall now see.

As with any action that involves setting the printer, the first step is to put LocoScript into its Printer Control State – by pressing the PTR key. Do this now. Once you are in Printer Control State, you have an array of menus to help you set up any aspect of the printer. The one you want here is the Printer menu which, as you see, is brought onto the screen by pressing f5. Press f5 now and the following menu appears. This looks familiar because it has exactly the same layout as the Printing menu you have just used to tell LocoScript which printer you wanted to set up the MAIL.TXT document for.



Moreover, it works in exactly the same way. In other words, you start by selecting the Printer option, which gives you a menu of the printers LocoScript currently has information about. You then select the printer you want and move on, through the `Character set` option, to the menu of the Character Sets available for the printer you have picked out – and so on to the Character style menu.

Use these menus to set up the Printer software for the `D630` printer, `UK ASCII96` Character Set and the `Elite 12` Character Style.

• Again, you may just want to change the Character Set or the Character Style. In this case, use the Printer menu as described above but select the Character Set or the Character Style option as appropriate. You don't have to start by selecting a printer.

You must wait until LocoScript has finished printing everything you have asked it to print before you change the Printer, the Character Set or the Character Style that it is set up for.

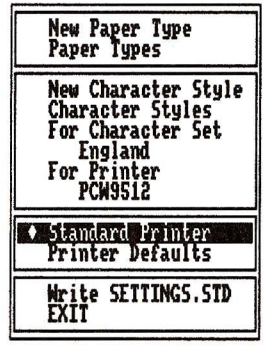
Starting the day with your chosen printer

LocoScript 2 is initially set up to treat the built-in printer as the standard printer and so this is the printer LocoScript is set up to use immediately after you load it. It also expects you to use A4 paper, unless you tell it otherwise. You can see this from the Alert message that appears the first time you print anything after loading LocoScript. The job of this message is simply to remind you which printer and paper LocoScript is expecting to use.

The other advantage of setting up the document for the right printer etc. is that you won't get an Alert message every time you try to print the document, telling you that you are about to print on a different printer.

This is obviously inconvenient if you always want to use your alternative printer, so to end this session we shall take a brief look at how to set up LocoScript so that it starts each day ready to use this 'alternative' printer – and for this to be ready set up for your preferred Character Set, Character Style and Paper Type.

The details of the printer, Character Set, Character Style and Paper Type that you want to treat as the standard ones is something else that LocoScript records in its store of Settings – so once again, what we have to do is change SETTINGS.STD. The first step is therefore to display the Disc Manager Screen, insert your Start-of-day disc in Drive A (press [f7] to signal the disc change) and press [f6] to bring the Settings menu onto the screen. Do this now. This time the part of the menu you want is the bottom section.



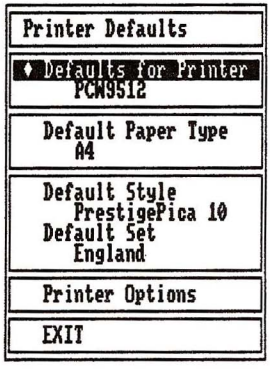
Setting the Standard Printer

To select the printer to be used as the Standard Printer, select the `Standard Printer` option and press [ENTER]. LocoScript then displays a list of the printers that are currently available. Pick out the name of the printer you want in the usual way – by moving the Menu cursor to it and pressing [⊞]. For example, pick out `D630`. This now your new Standard Printer.

Now press [ENTER]. This returns you to the Settings menu. What we recommend you to do now is select the `Printer Defaults` option and check which Paper Type, Character Set and Character Style this printer is automatically set up to work with, because ideally these should be the ones you use most often. Details of how to set these options are given below.

Setting Printer Defaults

For each of the printers you use, you can specify the Paper Type, the Character Set and Character Style that you would like it to be set up for and record this in the Settings file. These will then be the 'Current' details when you first use this printer and will remain so until you select the `Change to printer intended for the document` option when printing a document or set up the printer specifically for a different Paper Type or Character Set. If you only ever use one type of stationery on a particular printer, you need never worry again about setting the printer up for this type of paper. LocoScript looks after it for you.



The way to set these 'Defaults' for a printer is to select the `Printer Defaults` option in the Settings menu and press [ENTER]. You then see a new menu, summarising the current Defaults for one of your printers. If you have just set the Standard Printer, the details displayed will be those for the printer you have just picked out. If you want to set the details for a different printer, check the Menu cursor is on `For Printer`, press [ENTER] and select the printer you want from the Printer menu that appears.

– Paper Type

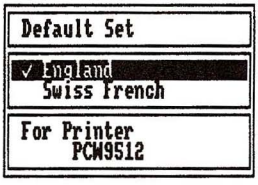
To set the Paper Type, check that the Menu cursor is on `Default Paper Type` and then press [ENTER]. Do this now. LocoScript then displays a list of the Paper Types it knows.

Simply pick out the Paper Type you want by moving the Menu cursor to it and pressing [+] in the usual way. For example, you might select `11" Fanfold` if you wanted 11" continuous stationery as your standard paper on your Standard printer. However, for the moment it is probably best to leave the Paper Type as A4. If you have selected Single Sheet stationery, now set whether this is to use used Landscape or Portrait (see Session 20).

Finish setting the Paper Type by pressing [ENTER]: you are then returned to the Printer Defaults menu.

– Character Set and Character Style

To set the Character Set, move the Menu cursor to `Default Character Set` and press [ENTER]. This gives you a list of all the Character Sets for your chosen printer:



Select the Character Set you want in the usual way: for example, move the Menu cursor to `England` and press [+] to select the England Character Set. Then press [ENTER]

to return to the Defaults menu. Once there, select `Default Character Style` and press [ENTER] to see the menu listing all the Character Styles for your chosen Character Set. Pick out the Style you want by moving the Menu cursor to this option and pressing [⊡]; then press [ENTER] to return to the Defaults menu again.

When you have finished setting all the defaults for this printer, you can either set all the defaults for another printer (pointing to `For Printer` and setting another printer) or you can select the EXIT option at the bottom of the menu and return to the Settings menu. Select this menu's EXIT option to return to the Disc Manager, via saving the new SETTINGS.STD file on your Start-of-day disc.

Note: If you want to retain these defaults, you must update the SETTINGS.STD file on your Start-of-day disc. If you don't, LocoScript will lose the information about your new printwheel the moment you switch off or reset your machine and you will have to set up these details all over again.

Session summary

In this session, you have seen:

* The hardware and software you need to print LocoScript documents on a printer other than the PCW printer
* How to set up a document for a particular printer, Character Set and Character Style
* How to set up LocoScript for a particular printer, Character Set and Character Style
* Why it is a good idea to set up both the document and the printer for the same printer, Character Set and Character Style – and to fit the right printwheel on a Daisy-wheel printer
* What happens when the printer software is set up for a different type of printer, etc. to the document
* How to install a new printer
* How to tell LocoScript about extra printwheels that you buy
* How to make your chosen printer the standard printer on your LocoScript system – and how to make a particular Character Set, Character Style and Paper Type standard on that printer

Session 24

Using one document as a pattern for another

In this session, we look at the feature of LocoScript which means that you can always use the same style of document for a particular type of job. You set up in a document all the details you want:

- the Stock Layouts
- the Headers and Footers
- the type of paper and how the page is laid out
- the printer you use
- text that will appear in every document – your address, for example

...

and LocoScript will arrange that this document is used as the pattern for every other document of the same type. And if you put a little effort into designing this document – for example, using a special style of text for the address – you will get very professional-looking results in all your documents without any extra effort.

The document you have to prepare is a perfectly normal LocoScript document. You can print it, edit it ... and everything is set up within it exactly as we have described in the earlier sessions of this tutorial. The only thing that is special is the document's name: it must be called TEMPLATE.STD. (A template is something used in woodwork or metalwork as the pattern for particular piece of work.)

If a group contains a document called TEMPLATE.STD, then it is used as the pattern for each new document created in that group. In fact, the new document is simply a copy of the TEMPLATE.STD document in every detail.

What this means is that you can have up to eight different templates on one disc – one in each group. So, for example, you could have a separate template for:

- letters on A4 paper
- letters on A5 paper
- memos
- reports
- articles for magazines
- meeting agendas
- labels; and
- acknowledgements

all on the same disc. And each new document that you create will have exactly the same Layouts, etc. as the template for its group.

What we are going to do in this session is work out all the details that you would need in the templates for two common types of document – letters on A5 paper and 3" address labels – and then show you how to put such a design into practice by working through creating the template for the A5 letters. We'll store the new template in the second group of your 'Documents' disc: so, if necessary, replace the disc in your drive by your Documents disc. (As always, remember to press [f7] after changing discs.)

Stage 1: Planning

As we have pointed out a number of times in this tutorial, sitting down and planning precisely what you want to do pays off – and this is particularly true when you are preparing a TEMPLATE.STD. Get the TEMPLATE.STD right in every detail and you will get the documents you prepare based on this template right as well. You won't have to do any time-consuming adjusting of such things as Stock Layouts or Header and Footer Zones. Instead, you will be able to concentrate on your text.

There are a lot of things to decide on:

- what paper to use
- how large a Header and Footer Zone you want
- what rules you want to set about page breaks
- how the Headers and Footers are to be applied
- what layout you want for the Header and Footer
- whether either the Header or the Footer will be the same for all documents prepared with this template
- what margins etc. you want to have at the beginning of the document
- what Stock Layouts you want and how these are going to be used
- what standard text you want in the template

– in short, just about everything that we have covered in this tutorial comes into creating the TEMPLATE.STD you want.

But having said that (and probably frightening you rigid), these are only the decisions that you make, one way or another, for every single document you work on – and anyway, in many cases you will just want a setting that is already in the TEMPLATE.STD document, particularly when you want to print on A4 paper in the built-in printer. LocoScript's TEMPLATE.STDs let you think about all these details once (for each type of document you want to produce), get it right and then know that every document is set up correctly for ever more.

Moreover, the chances are that you already have a document with enough of the right characteristics that you can readily create a perfect template from it – just by making a copy that you call TEMPLATE.STD and then editing it.

However, even if you have a document ready to copy, you still need a clear idea of what you want in the template – if only as a checklist while editing the copy. One way of sorting out what you require is through a Question and answer session:

	A5 Paper	Labels
Which printer and print wheel should the documents be set up for	The PCW printer and the Prestige Pica print wheel	The PCW printer and the Prestige Pica print wheel
What paper do you want to use	A5 single sheet – that's 8½" long (50 lines) and 5⅞" wide	3" continuous – that's 18 lines long
How large a Header and Footer Zone do you want	3 lines each – and as you won't be able to print on the top 6 lines or the bottom three lines, that leaves 50–6–3–3–3=35 lines for document text on each page.	None
What rules do you want to set about page breaks	No split paragraphs	Don't care
How are the Headers and Footers to be applied	First page – Special Header and Special Footer; Other pages – Header only	Irrelevant
What layout you want for the Header and Footer	Margins at character positions 5 and 53; character pitch PS, line spacing 1, CR extra spacing 0, line pitch 6	Irrelevant
Are any Headers and Footers the same for all documents	The First Page Header and Footer will be the same	Irrelevant
What margins etc. do you want set in Stock Layout 1	Margins at character positions 10 and 53, a simple tab at character position 15, character pitch PS, line spacing 1, CR Extra Spacing ½, line pitch 6, justified	Margins at character positions 5 and 50, no tabs, character pitch PS, line spacing 1, CR Extra Spacing 0, line pitch 6, unjustified (ragged)
What are the details of Stock Layouts 2 and 3	Layout 2– as Layout 1 but right tab at position 40, character pitch 10 and CR Extra Spacing 0; Layout 3 – as Layout 1 but simple tab at character position 20	Irrelevant
What standard text do you want in the template	The company's address, the words Ref:, Your ref: and Dear, and the Yours sincerely	None

Stage 2: Creating a new template

TEMPLATE.STD documents are perfectly standard LocoScript documents and so can be created by using LocoScript's Create New Document facility, just like any other document. Just create it in the group that you want to use it as the pattern for (see Session 3). Or alternatively, as we mentioned above, copy an existing document that has a lot of features of the template you want to create, call the copy TEMPLATE.STD and edit it (see Session 7).

Copying an existing document is often a very attractive option – potentially saving you a lot of effort, particularly if the original document is ready set up for the right paper and has the right Stock Layouts and Pagination text. However, it is still best to work through steadily checking every detail – just as if you were setting the document up from the word go.

For practice – and to convince you that it isn't such an enormous job as it seems – we shall opt for creating a new document. So move the Group cursor to `group 1` on your Documents disc, create a new document and call it TEMPLATE.STD.

Because LocoScript didn't have a template to copy, the document is set up in its default way for printing on A4 sheets of paper – inch-wide margins, no tabs, etc. You now change this set-up to fit the documents you want to create in future.

Stage 3: Check and correct the Document Set-up

The first aspect of the template to set is everything to do with the Document Set-up – ie:

- the printer and print wheel
- the paper type
- the Header and Footer zones
- the way the Header and Footer text is applied
- special rules about page breaks
- the Stock Layouts
- the layout used for the Header and Footer text
- and, finally, the Header and Footer text itself

These can be set essentially in any order but it is a good idea to set the paper type before you set the Header and Footer zone sizes. (As you will remember, the page length and gaps quoted in the Page Layout menu are that of the current Paper Type – so by setting the Paper Type first, you ensure that you see the right numbers in the Page Layout menu.) It is also a good idea to get the Pagination text layout sorted out before you type any Header and Footer text.

Work through checking and setting up all of these for the A5 letters we have just described. This is easily the best way of seeing how straightforward a task this really is – and how, in the event, there is often little work to do.

As everything we are setting here is an aspect of the Document Set-up, the first step is to gain access to the Document Set-up – which, you will remember, you do by selecting the Document Set-up option in the Actions menu (see Session 18). Press [f1] to bring the Actions menu onto the screen and select `Document Set-up`. As well as displaying the special Pagination Screen, this gives you access to all the menus that help you change how the Document is set up.

If you are using this session to help you set up your own templates, you should ignore the details of what we set here and substitute the settings you want. What we describe here are the settings for our example A5 letter template.

1) The Printer and the Print wheel (Session 23): Our design specifies the built-in printer, which should already be set. However it is always best to check – so pull down the Printing menu and check that the Printer Selection menu shows the `PCW9512` printer, the `England` Character Set and the `PrestigePica` Character Style are selected. If they are, there's nothing to set – so just press [CAN]

2) The Paper Type (Session 20): Pull down the Page menu and select `Paper Type`, to bring the Paper Type submenu onto the screen. The Paper Type you want – A5 – is one of the standard paper types, and so can be selected directly. Do this now; then check that the Portrait option is selected, so that you will use the page lengthways rather than widthways. Press [ENTER] to confirm this choice.

3) The Header and Footer Zone sizes (Session 18): Pull down the Page menu and select `Page Layout` to bring the Page Layout submenu onto the screen.

Set a Header Zone Size of 3 and then set a Footer Zone size of 3. The Page body this leaves should be 35 lines. Also select the `Fixed Footer Zone` option so that the Footer will always appear in the same position on the page. Press [ENTER].

4) How the Headers and Footers are used (Session 17): Pull down the Page menu and select `Header/Footer Options` to bring the follow-on submenu onto the screen.

In the top section of the menu, select `first page only` – so that one Header/Footer pair is used for the first page and the other pair is used for all other pages. In the middle section, set all but the last option – `Last page Footer enabled` – so that the first page will have both a Header and a Footer, but the last page will only have a Header.

Finally select `Use footer for first page`, so that single-page documents have the special Footer you set up on the first page as well as longer documents.

Press [ENTER].

5) Page Break rules (Session 18): Pull down the Page menu, select `Page Break Control` and press [ENTER]. Select `Don't break paragraphs` – to ensure that no paragraph is split between one page and another, and press [ENTER].

6) The Stock Layouts (Session 18): Pull down the Layout menu, select `Change Stock Layouts` and press [ENTER]. The Stock Layouts to set up are:

Stock Layout 1, which will be used for most of the text

- Stock Layout 2, for the Address part of the document; and
- Stock Layout 3, for Yours sincerely, etc.

Select each of these in turn and press [ENTER]: this puts you into the Layout Editor.

In each case, you will need to set justified text and margins at character positions 5 and 53, and to check that you have a Line Spacing of 1, a Line Pitch of 6 and that you will use the unslashed zero. (How to make these settings is described in Session 12.) The other settings to make are:

- Stock Layout 1: a simple tab at character position 15, Character Pitch PS, CR Extra Spacing ½ and the name `Main`
- Stock Layout 2: a simple tab at character position 15, a right tab at position 40, Character Pitch 10, CR Extra Spacing 0 and the name `Address`
- Stock Layout 3: a simple tab at character position 20, Character Pitch PS, CR Extra Spacing ½ and the name `Yours etc.`

Press [EXIT] after you have finished setting up each Stock Layout so that you can pick the next one. Press [EXIT] and then [ENTER] when you have finished setting all of the Layouts.

7) The layout for the Header and Footer text (Session 17): Pull down the Layout menu and select `Change Layout` to use the Layout Editor to change the Pagination text layout.

Set the margins at character positions 5 and 53, with the help of the Margins menu. Clear any tabs with the help of the Tabs menu. Set the character pitch to PS, the Line Spacing to 1, the CR Extra Spacing to 0 and the Line Pitch to 6 with the Size menu. Also set the name to `Pagination`. Finally use the Options menu to make sure that the text won't be justified and that the correct style of zero is used (the one without a slash).

8) The standard Header and Footer text (Session 17): Type in the special Header text and the special Footer text for the first page in the slots of the Pagination screen for Header/Footer 1.

• That's checked and adjusted all aspects of the Document Set-up. You should now press [EXIT] and return to the start of the document text.

Stage 4: The standard text

The remaining task is to set up the text that you will want in every document that uses this template. In our case, this is the Company address, the 'Ref's and the final Yours sincerely.

Type these exactly as you would in any other document – remembering, of course, to type:

- [⊞]LT2 on the line above the address so that you use the `Address` layout for this
- [⊞]LT1 at the end of the address to that you use the `Main` layout for the main part of the document; and
- [⊞]LT3 on the line above the `Yours sincerely` so that you change to the `Yours etc.` layout for this.

Stage 5: Save the template

Once you've set everything up, all that's left to do is to save this template – exactly as you would any other document.

• Exactly the same procedure is used to set up other templates – one for each of the groups on the disc. Work out what type of documents you will want to store in each group and the template for this type of document and then set it up.

Note: The document called SESSION.24 on the Start-of-day disc was created using this example template.

Working with templates

The presence of a document called TEMPLATE.STD in a group means that this will be used as the pattern for every new document that is created in that group. So if you wanted, you could have a different template in every group on every disc that you use.

Maybe this is what you want. However, you are much more likely to want to use a just few different templates across a number of discs. How do you go about arranging that?

The answer is that you put copies of the templates you want to use, one per group on Drive M – because if there isn't a template in the group you are actually working on, LocoScript will look instead for a template to copy in the corresponding group on Drive M. So if, say, you organise your work such that you always put A4 letters in the first group on the disc (group 0), A5 letters in group 1, and memos in group 2, you don't have to have a copy of each TEMPLATE.STD document on every disc – you just need on Drive M a copy of the A4 letter template in group 0, a copy of the A5 template in group 1 and a copy of the memo template in group 2.

To make things even easier for you, you don't actually have to copy the templates to Drive M yourself. If you store your templates in the right groups on your Start-of-day disc, LocoScript will automatically copy each template to the corresponding group on Drive M as part of the process of loading LocoScript 2. You don't have to do a thing!

The Example Templates

Because working with templates is such an important and productive aspect of using your PCW9512, your Start-of-day disc has been provided with a set of example templates as a demonstration. Although these templates can be used 'as is' to create documents, it is just as important to realise that you can replace them with your own templates, more suited to your actual requirements. These example templates can be easily modified to suit your particular needs, whilst still retaining their original 'character'. The two templates containing LocoMail commands (`Mailshot` and `Invoice`) can be substantially redesigned in the areas not containing codes. However, apart from what is described below, it is beyond the scope of this manual, or the technical support available from Amstrad, to edit the sections containing LocoMail codes. To do this you should consult the *LocoScript 2 Technical Reference* (published by Locomotive Software), or other LocoScript applications guides.

Group 2 – Letters Template

The only difference between a document created with this template and a document created with no template is the presence of some preset tabs in the `Main` and `Pagination` Layouts. You may customise this template by setting a non-standard paper size, or by altering the margins and any of the other details of the Stock Layouts. Remember that the contents of Stock Layout 1 (called `Main` in all the example templates) is used as the default when creating a new document.

Group 3 – Manuscript Template

Here is a very popular template for those writing articles, books or theses. Much of the 'magic' is contained in the pagination text (press [f1] and select `Document setup` while editing). A very professional looking manuscript is printed, with double line spacing, justified text, page numbers and running chapter headings.

Group 4 – Memos Template

Here we have taken the Letters Template and added some 'standard' text to it. This simply helps in the repetitive task of typing memos, effortlessly creating a consistent framework within which to type.

Often you will find it worthwhile to fill a number of groups with this type of template, each containing the text of a different 'form letter' or commonly prepared document.

Group 5 – Labels Template

In Session 22 we showed how to use simple LocoMail techniques to handle lists of names and addresses. This Labels template illustrates a less sophisticated way to prepare addresses for continuous labels. By choosing the `2" labels` Paper Type and a corresponding small page size, each individual address can be typed in as if on a page of its own. When printed – with the normal `P=Print` command – they are automatically printed out on individual labels ready to be peeled off and stuck onto envelopes. List of names prepared in this way can be edited and maintained using normal LocoScript commands (try '`Find`', for example, to look up a particular name) and even used later as a data document for a LocoMail `Merge` session.

Group 6 – Invoice Template

The most complex of the example templates, this also demonstrates the versatility and power of the PCW9512 not just as a text editor, but as a complete system for running your business. An Invoice can be prepared with all the calculations performed automatically, simply by 'Filling' this document from the keyboard. Once again, a certain amount of redesigning of the final result can be achieved by editing the template, particularly the textual sections. For example, you will need to change the VAT number and may perhaps prefer to exchange occurrences of the word '`Order Number`' to '`Account Number`'.

The formatting of the various types of lines requires the use of a couple of different Layouts. Notice how use is made of both Right tabs and Decimal tabs. Some of the formatting information (for example the pitch of the '`Description`' field) is contained in the '`Invline`' program unit at the start of the template. As with the Mailshot template editing is best done with codes showing, but you will probably find it best to fill the document with codes hidden for clarity.

Once again, if you are unable to obtain the result you require by inspection and mimicry of the example then you must refer to a 'tame expert' or one of the reference books mentioned above.

Group 7 – Mailshot Template

Designed to be 'Merged' with a list of names, addresses and appropriate data (for example, `EXAMPLE.DAT`), this template illustrates the production of sophisticated bulk mailing letters with a minimum of operator intervention. It is therefore set up to use continuous (preprinted) stationery and is recommended to be used with the `Automatic` option of LocoMail.

LocoMail commands (as described in Sessions 21 and 22) are included in the template for entering the date and retrieving the name, address and data from the prepared data file. Letters of this kind can be difficult to design. Letters addressed to 'Mr J Smith, 100 High Street' that then start 'Dear Mr J Smith' are a dead give-away!

Customising letters created using this template is quite straight-forward. Use C=Create, then simply edit the body of the letter, retaining the first few lines and, if required, the LocoMail commands used to insert parts of the name and address into the text. LocoScript will always reformat the result, whatever the size of the inserted words. No harm will come from deleting unwanted LocoMail commands, as long as you delete the whole highlighted section. It is normally easier to edit this type of document with codes showing (f8=Options)

The middle section of this example shows the LocoMail equivalent of an 'If-Then-Else' type of decision – in this case substituting the relevant branch office address. You could modify the operation of the example by careful editing of the text, even extending the number of choices by repeating the pattern of LocoMail codes. If you are unable to obtain the result you require by inspection and mimicry of the example then you must refer to a 'tame expert' or one of the reference books mentioned above.

This template can also be 'Filled'.

We hope you will find the techniques demonstrated in these examples both useful and stimulating. However, if one or more of the templates are of no use to you, then simply delete them from your copy of the Start-of-day disc. You can even remove the name of the group by using the f4 Disc Management menu: simply select Rename group, then press the appropriate number key (0–7) to reset the group name. You can then use that group for a template more appropriate for your needs.

The redundant templates will then no longer clutter the Disc Manager Screen! If need be, you can always retrieve a copy of them from the original LocoScript System Disc.

Remember you just need to store templates on your Start-of-Day disc, unless you require more than eight different ones. When you do want an extra template, you can have a 'local' template on the same disc and in the same group as the actual documents you are going use.

Session summary

In this session, you have seen how LocoScript searches for and uses one document as a pattern for another, and how you can make use of this by:

- Setting up the documents to be used as the pattern for other documents of the same type
- Arranging to store these documents so that the right one is used as the pattern for the particular document you want to create

Getting the best out of LocoScript 2

The tutorial you have just completed has introduced you to all the features of LocoScript 2. You now know how to use LocoScript.

But before you rush on to using LocoScript to prepare all your letters, articles, invoices etc., it's worth sitting down and thinking about how you are going to put LocoScript to good use. You have been introduced to all the various facilities of LocoScript; how are you going to ensure that these help you in your own work?

Organising your work

The aspect of using a word-processor that cannot be emphasised too much is how much easier everything is if you have a system of working and organise yourself accordingly. Decide what you are going to use LocoScript for, what printers you are going to use, what stationery you are going to need, how many discs you will need, ... – and you save yourself a lot of time and effort in the long run.

So:

- Decide which printer you are going to use for most, if not all, of your work – and make sure that you have all the necessary cabling, interfaces and Printer files for this printer (see Session 23).

- Make sure that you have a copy of each of the Printer files you need in the first group (group 0 or the SYSTEM group) of your Start-of-day disc.

- Make sure that all the standard types of paper you plan to use and all your Print wheels are specified in the Settings file, SETTINGS.STD (see Sessions 20 and 23).

- Plan how you are going to use your discs. Do you want to devote one disc to letters, one disc to memos, one disc to articles (say) – or do you want to keep each disc as a record of all your work between one date and another, and so have a mixture of letters, memos and articles on each disc.

- Plan how you are going to make use of LocoScript's system of groups. Do you want to always use the same group (for example, group 2) for a particular type of document (say, A4 letters)? Remember, if you do always use the same group for a particular type of document, you can store the template for this group in the corresponding group on your Start-of-Day disc – and LocoScript will automatically arrange for this template to be used for all new documents created in this group.

- Set up the templates you want for your new documents and store these in the appropriate group either on the Start-of-Day disc or on the appropriate disc (see Session 24).
- Set up files containing the standard phrases you expect to use (see Session 15).
- In short, get everything set up ready and on the right disc.

Note: Although it really is a very good idea to get all these things sorted out before you start, you shouldn't feel that you must get everything right first time. Everything you set up can be changed, files can be moved to different discs and to different groups, templates can be edited, etc. etc. – as you develop and improve your systems of working. However, do try to set up as many of these aspects as possible. The more documents you create in an unstructured way, the harder it gets to sort everything out.

Spotting the word-processing tools to use

The Tutorial was designed to build up the number of tools you know how to use, step by step – so that you gradually increased the range of features that you can give your documents. But even so, you can feel a little lost in deciding which of LocoScript's facilities to use when it comes to preparing your own work.

There isn't any need to lose sleep over this. As we have seen, one of the beauties of LocoScript is that you can produce very professional-looking results without using anything like the full range of word-processing tools that are provided.

To a great extent, knowing what to do comes from trying things out and seeing what gave you good results and what was an absolute disaster – and from seeing what other people do. So, to finish we give some examples of documents you might want to produce and which word-processing tools that you might use in preparing these.

Business letters

- 'Pseudo' Letterhead – by setting up your company name and address either as the Header text for the first page or just setting it as initial text in a Template. Make them attractive by using different character pitchs and stylings, and by positioning the text using `(CEntre)` and `(RAlign)`
- Letter starting beneath Letterhead on printed stationery – by setting the Header Zone
- List of Directors across the bottom of the page – set in the Footer text for the first page
- `Letter to .....` at the beginning of continuation pages – by setting up the Header text for all pages except the first
- Addressee's address in the right place for window envelopes – by setting a start position for this in the Template
- Standard positions for the date and for reference numbers – by setting these in the Template
- Special styling for addresses etc. – by using the different character pitches and print styles available in LocoScript
- Standard names in the 'Copies to' list – by setting their names up as Phrases
- Copy letters – by telling LocoScript how many copies you want to print
- Corrected spelling – by using LocoSpell
- Personalised versions of the same letter to different people – by using LocoMail or by editing the original version

Memoranda

- The word MEMORANDUM written across top of the page in widely-spaced bold letters – by selecting Character Pitch 10 Double-width, using Bold to style the word and using the `(CEntre)` code to position it
- Standard positions for `To:`, `From:`, `Date:`, `Copies:` – by setting these in the Template or by storing these together with the word MEMORANDUM in a Phrase
- Line across the page – by creating a line made up of a `(+UL)` code, a `(RAlign)` code, a space, a `(-UL)` code and a Carriage Return. This, too, can be stored as a Phrase.
- Names in the 'Copies to' list – by storing these as Phrases
- Multiple copies – by telling LocoScript how many copies to print
- Standard Memo paper – set up as one of LocoScript's Paper Types and specified in the 'Memo' Template

Reports and Magazine articles

- Making major revisions – by using the Block Editing techniques
- Inserting text from other articles or reports – either via the Blocks or by inserting whole documents, including ASCII versions of text produced on a different word-processor
- Double-spaced text – by setting the Line Spacing to 2
- Producing draft versions on cheaper paper – by setting up the document for the final paper but setting up the printer for the cheaper paper
- Correcting individual pages of the final version – by reprinting just the pages you want
- Moving quickly around a long document – by using `Find page ??` and/or by putting in Unit markers at strategic points in the document
- Numbering the pages – by setting up a Header or Footer that includes the `(PageNo)` code
- Correcting the spelling – by using LocoSpell
- Counting the number of words – by using LocoSpell

Technical reports

- Preparing tables – by setting up a Layout with an appropriate range of tabs
- Drawing horizontal lines across tables – by using `(+UL)` at the beginning of each line and finishing the line with a `(RAlign)` code, a space, a `(-UL)` code and a Carriage Return
- Drawing vertical lines in tables – by using the Vertical Bar character
- Ensuring that tables are not split over two pages – by inserting Keep codes on the first line and/or the last line of the table
- Inserting text from other reports – either via the Blocks or by inserting whole documents, including ASCII versions of text produced on a different word-processor
- Using the `Page` *n* `of` *m* style of page numbering – by setting up a Header or Footer that includes both the `(PageNo)` code for *n* and the `(LPageNo)` code for *m*
- Preparing complex technical formulae – by using LocoScript's symbol characters
- Typing non-standard fractions – by setting the numerator as a superscript and the denominator as a subscript

Books

- Brief title of each chapter at the top of every page except the first – by preparing each chapter as a separate document, setting this brief title as Header text and disabling the Header on the first page
- Left and right pages – by using Header/Footer text 1 on odd pages and Header/Footer text 2 on even pages and setting these up to suit righthand pages and lefthand pages, respectively
- Numbered pages – by including the `(PageNo)` code in either the Headers or the Footers
- Major changes – by using the Block Editing techniques either to move text around within the same document or to transfer text from one chapter to another
- Leaving spaces for illustrations at the top or the bottom of a page – by putting in strategic End-page-here characters ([ALT] [RETURN]), followed by lots of carriage returns when you want to leave space for a picture at the top of a page.
- Special Paper – by setting up a Paper Type and setting this Paper Type in the Document Set-up
- The same Page Layout etc. for each chapter – by setting up this layout first in a Template
- Standard styles for Headings, Subheadings, Notes etc. – by setting up Stock Layouts for these in the 'Chapter' Template
- Consecutive page numbers in chapters that are prepared separately – by using the Set First Pages procedure
- Corrected spelling – using LocoSpell

Invoices

- Standard way of setting out the invoice – set up through a Template that is a standard invoice or a Master invoice that can be filled in using LocoMail
- Have special ways of setting up parts of the invoice – by setting up appropriate Stock Layouts in the 'Invoice' Template
- Standard items that appear on invoices – stored as Phrases, in one or more Phrases file. These Phrases could include the one-off price so that you don't have to remember this or look it up specially
- Copy invoices – by telling LocoScript how many copies you want
- Do arithmetic on information in the invoices – by using the extended features of LocoMail described in the LocoScript 2 Reference Guide.

Club administration

Meetings:

- Produce this month's agenda – by copying last month's and editing it, for example using Exchange to change the date of the meeting throughout
- Have pre-prepared standard items for discussion, eg. the Christmas lunch – stored as Phrases
- Have a standard style for both agenda and minutes – by setting these up in Templates. In particular, set up Stock Layouts for Agenda Items, Questions, Replies, etc.
- Shorthand versions of the names and positions of Committee members – by storing these as Phrases
- Producing copies for every member – by telling LocoScript to print the number of copies you want
- Producing labels so that copies of the agenda, etc. are sent to every member – by creating a document set up for your Labels stationery with each name and address on a separate page, or by setting up a Label master and using LocoMail

Circulars:

- Producing copies addressed to every member of the club – prepare a document in which the club address, date etc. is set up as the Header for every page, the text of the Letter is set up as the Footer and make the text of the document the names and addresses of the members – one on each page – or better, set up the circular as a Master document and use LocoMail to prepare copies for each member

Newsletters:

- Produce a professional-looking newsletter – by using character pitches and line spacings to produce attractive text and by using `(CEntre)` and `(RAlign)` to position it
- Make special items of news stand out – by using a special character size or bold to style it differently from other items
- Standardise on a selection of different text styles – by storing these as layouts or by storing combinations of Pitch, Line Spacing, Bold and Underline codes in Phrases
- Draw lines across the page – by creating a line made up of a `(+UL)` code, a `(RAlign)` code, a space, a `(-UL)` code and a Carriage Return. This can be stored as a Phrase for re-use.

Appendices

Appendix I

Converting to LocoScript 2

If you have used the earlier version of LocoScript – LocoScript '1', you should find it very easy to adapt to LocoScript 2 because you will be used to using keystrokes and menus to pick out the actions you require.

However, there are still aspects of LocoScript 2 for you to learn – and not just the extra features LocoScript 2 has. Changes have also been made in other areas, principally to make it easier to use some of the more complex features of the system.

This appendix outlines all the differences between LocoScript '1' and LocoScript 2, picking out the sessions of the Tutorial you should pay particular attention to. It also explains what you need to do so that a document you prepared with LocoScript '1' can be processed using all the features of LocoScript 2.

Of course, all these changes do mean that you need to re-learn certain aspects of LocoScript – in particular, the names of the menus and the names of the menu options you need, and the keys to press to get certain actions. For example, in LocoScript 2, the key to press to tell LocoScript you have changed the disc in the drive is [f7]

Overall changes

LocoScript 2 is essentially LocoScript '1' with:

- Extra features – in particular, the ability to print on printers other than that supplied with your PCW and a much increased range of characters so that LocoScript could support many more languages
- Different menus and menu options

Most of the changes are in the parts of LocoScript that many users found difficult – especially handling different sizes of paper and Layouts, and changing the Document Header. For example, different Layouts now have names so that you can select the one you want by picking out its name. Another change is that the idea of the Document Header has gone and its place has been taken by Document Set-up, which explains very much better what this area of the word processor is all about.

LocoScript 2 also has a system of named 'Paper Types' so that instead of remembering that 11" continuous stationery is 66 lines long and that you like to set a gap of 5 lines at the bottom, you can just pick out the type of paper you have called `11" Fanfold` – and LocoScript does the rest from its store of information about the types of paper you like to use.

Moreover, you no longer have to set up the printer as well as the document for the paper you want to use unless you want to print on a particular type of paper. Before it starts printing, LocoScript 2 checks which type of paper the document is set up for and asks you whether you want the printer to be set up for the same type of paper. If you say yes, then LocoScript 2 does all the setting up for you.

Another important difference is that you no longer need to remember subtle variations in the way LocoScript menus work. There are now just three types of menu:

- **Commands menus** – which give a list of alternative actions and the one that will be carried out when you press [ENTER] is picked out by an arrow ▶ (or a diamond ◆ when LocoScript will return to this menu after carrying out your command). You move the arrow to the option you require by moving the Menu cursor with the cursor keys or by typing the letters written as capitals – just as with LocoScript '1'

- **Settings menus** – which give you a list of items that can be either 'set' (turned on) or 'cleared' (turned off). The ones that are set are picked out by a tick to the left of the option. To set an option, point to it with the Menu cursor and then press [+] or the Space Bar: to clear an option, point to it with the Menu cursor and then press [-] or the Space Bar – exactly as you did with LocoScript '1'. If what you do affects any other setting, then LocoScript will make all the necessary adjustments for you.

- **Selection menus** – which essentially show you the details that LocoScript is about to work with, in particular the details of the document you have picked out to process. These work in exactly the same way as they did in LocoScript '1'. So to change any of the details, you move the Menu cursor to the relevant line of the menu and then edit the current information as if it were text – with the added facility of clearing away text by pressing [-]

As in LocoScript '1', some menus display details, for example, of a document you have picked out to work on, a choice of settings to make and/or a choice of actions when you press [ENTER]. Such menus have a 'Selection' menu part, a 'Settings' part and a 'Commands' part.

Another overall change is that LocoScript 2 is much more geared to handling long documents than LocoScript '1'. Moving around a long document no longer means scrolling through the whole document on the screen: instead LocoScript jumps 'straight' to the new part of the document. In fact, all movements up and down a document are very much faster.

Some of the changes may catch you a bit by surprise. For example, differences in the character set for LocoScript 2 mean that you can no longer give your documents names that include ` ~ and ^. But you can include ½, § and ◊. The names of documents (and other files) with these characters are automatically converted.

Many of these changes are for technical reasons, but others we hope you will agree make LocoScript better – for example, the way LocoScript 2 immediately gives you a fresh line to work on if you insert some text at the start of the line.

Major parts of the Tutorial to study

A number of aspects of LocoScript 2 are either totally new or radically different in the way they work from LocoScript '1'. The following gives a brief idea of the changes that have been made but to use these features you must work through the part of the Tutorial that describes them.

Formatting and copying discs (in Session 7)

Making back-up copies and preparing new discs for use can now be done from within LocoScript. This should be simpler to use and less error-prone than using DiscKit because you don't have to stop and load the CP/M operating system and then re-load LocoScript when you have finished.

Layouts (Session 12 and in Session 18)

Layouts still cover essentially the same details of how text should be laid out but they work in a very different way.

In LocoScript '1', all the details about each Layout were held in the Document Header: in LocoScript 2, this information is held in the Layout code itself. All that's stored in the Document Set-up are 'Stock' Layouts which are used as patterns for new Layouts you create. These Stock Layouts have both names and numbers to make it easy for you to pick out the pattern you want.

When you change a Layout, you generally only change the Layout for the piece of text you are actually working on at present – you don't automatically change other parts of your document. There's a special procedure to follow – described in Session 18 – when you do want to make such changes throughout the document.

A particular advantage of the new system is that you can transfer all the details of the Layout with text that you copy or move to a different document.

Using different types of paper (Session 20)

In LocoScript '1', you had to know and remember a lot of details about the paper you wanted to print on – unless all you ever used was A4 paper or 11" continuous and you were prepared to leave alone all the settings LocoScript made for you.

LocoScript 2 makes it much easier for you to use different sizes of paper by introducing the new concept of Paper Types. Each Paper Type holds a complete specification of a particular type of paper – its width, its depth, and whether it is single sheet or continuous, etc. – and it will have a name like `A4`, `A5` or `3" Labels` to make it easy to pick out the Paper Type you want. A number of Paper Types are provided for you: you set up any others you want.

LocoScript 2 makes the job even easier for you by automatically setting up the printer for the type of paper you have specified for the document – if you want it to.

Whenever you ask it to print a document, it checks the type of paper you have specified in the document against the type of paper the printer is currently set up for and displays a message if it finds these to be different. One of the options given in this message is to set up the printer to match the document. All you have to do is to select this option and press [ENTER]: LocoScript 2 does all the rest.

Session 20 is also important because it introduces LocoScript's store of information about the printer and paper you use on your system.

Using alternative printers (Session 23 and in Part I, Chapter 3)

When you use LocoScript '1', you can only print your documents on the built-in printer and so you are restricted to the style of characters that this printer gives you. With LocoScript 2, however, you can set up your system to print on an alternative printer. So if you have a 'dot-matrix' printer, for example, you could use that to produce draft versions of your documents very quickly (at about four times the speed of a daisy-wheel printer). Session 23 describes how to set up LocoScript so that your documents are printed on your chosen printer.

You can print documents using LocoScript 2 on a wide range of different printers. The most straightforward to use are '630 compatible' daisy wheel printers and 'Epson compatible' matrix printers – that is, daisy wheel printers which obey the same printing commands and take the same daisy wheels as the Diablo 630 printer and matrix printers which obey the same commands as the Epson FX80 printer.

Setting Header, Footer and Text Zones (in Session 18)

LocoScript 2 divides up the page in a different way to LocoScript '1'. Instead of dividing the page into three zones, LocoScript 2 divides it into five areas – Top Gap, Header Zone, Text Zone, Footer Zone and Bottom Gap. The Top and Bottom Gaps are the parts of the paper the printer cannot print on and are defined by the type of paper you are using.

So instead of working out the depths of the Header and Footer Zones you need to accommodate both the Header and Footer text and the the parts of the page you can't print on, you just have to work out how big to make the Header and Footer Zones so that these can accommodate your Header and Footer text.

Another somewhat mind-bending task in LocoScript '1' was to work out the line number on which the Header and the Footer text was to start. You don't have to do this in LocoScript 2: instead the Header and the Footer automatically start at the top of their zones and you put in blank lines in the Header and Footer themselves to adjust the position of the Header and Footer texts. This is explained in Session 17.

Typing accents and special characters (in Appendix III)

The range of characters LocoScript 2 can handle is very much greater than in LocoScript '1', so that you can type text in a much larger range of languages – including those that use Cyrillic characters. There are over 400 different characters and symbols, each of which can be used in combination with 15 different accents. These characters include 10 characters that you can define yourself. (How to define these characters is described in the LocoScript 2 Reference manual – available from Locomotive Software.)

All of these characters can be displayed on the screen but it's only fair to warn you that you won't necessarily be able to print all of them on the printer you use. The characters that can be printed always depend on the printer you are using.

The way many of these characters are typed on the keyboard is new. LocoScript 2 has a number of 'Super Shifts' – that is, key combinations which change the effect of keys pressed from then on. For example, to type some Russian, you first select the Cyrillic Super Shift, and then use the keys as if each had a Cyrillic engraving. To return to normal you type another Super Shift.

Appendix III includes a complete listing of all the characters LocoScript 2 can handle, grouped under headings like Currency Symbols, Textual Markers, Accents, Mathematical Symbols. Beside each character are details of which keys you need to press to enter this character in your document.

Other parts of the Tutorial to work through

In addition to these major changes, a number of the word-processing features have been given important extra facilities. Again, we advise working through the relevant part of the Tutorial before you try to put these features to use.

Session 14: Refinements to Find and Exchange

This session tells you how to use the various options which have been added to Find and Exchange to make these features more powerful. These include telling LocoScript 2 to treat capital letters and small letters as the same when it is searching for the text you have given it, to search only for whole words and to set the case of the inserted text to match that of the replaced text. It is also possible to include 'wild cards' in the text being searched for.

Session 15: Extending the usefulness of Blocks and Phrases

Session 15 explains the changes in the way Blocks and Phrases now work.

Blocks are now remembered until changed, or until the PCW is turned off or reset. This means that blocks can easily be used to transfer text **between** documents,

as well as around a document. There's no longer any need (or any facility!) to save a block of text to disc in order to insert the same text in another document.

In addition, LocoScript 2 displays the state of blocks and phrases in a different way. Instead of just getting a list of the names of the blocks and phrases that are in use, LocoScript 2 displays the name and the first few words of each of the blocks and phrases. These lists are brought onto the screen by two new menu options Show Blocks and Show Phrases. The list can also be used to clear the contents of a block.

Another new feature is that you can have several sets of phrases and switch between them.

Session 5: Moving straight to a page

Whereas LocoScript '1' moves very slowly through long documents, LocoScript 2 can move directly to a given page. All you have to do is to select the Find Page menu option and type the desired page number. LocoScript 2 will then display the text starting at the selected page.

Session 11: Special spacing between paragraphs

In LocoScript '1', spacing out your paragraphs meant leaving a blank line between them. Of course, you can still do this but LocoScript 2 also allows you to be more subtle – for example, leaving half-line spaces between paragraphs. This is done by specifying a new parameter called the CR Extra Spacing which defines the distance the printer is to move, in addition to the standard line spacing, after lines ending in a carriage return.

Session 19: Giving documents consecutive page numbers

One of the more laborious tasks when you are preparing a book or a long report is ensuring that the various parts you have prepared as separate documents have consecutive page numbers – so much so, that it is often tempting to keep the report as one large document rather than worry about setting individual first page numbers.

With LocoScript 2, however, you can get the program to set all the first page numbers for you – by using the new Set First Pages option. All you have to do is to pick out the documents in the right order: LocoScript 2 then uses a counter to work out what the first page number of each document should be and sets this number in the document. If you use the `Page n of m` type of page numbers, this counter is also used to set the total number of pages recorded for each document.

Session 4: Printing documents

The menu that appears when you print a document has been extended.

One new option allows you to print multiple copies of the document. You can use this feature to give you multiple copies of both the whole document or just of certain pages.

Another change is that you now use this menu to specify whether you want High Quality or Draft Quality output on your dot-matrix printer. You don't set this up through one of the Printer menus any more. (**Note:** You normally only use Draft Quality on a daisy-wheel printer.)

Session 20: Fixing the Left Offset for different types of stationery

LocoScript 2 has a new approach to setting the Left Offset – that is, the shift in the printer's start-position so that your text is correctly positioned on the paper .

The Left Offset can still be set through one of the Printer menus, but you can also build the Left Offset you need for your continuous stationery into the specification of its Paper Type. This means that you can set up the Left Offset for your continuous stationery once and for all – provided you keep the tractors (that is, the paper holders on the tractor feed) in the same place, of course!

*** The sections of the Tutorial we've picked out here are ones that are essential to read if you are going to use these new features of LocoScript 2. We would also encourage you to read other sections of the Tutorial as well – particularly those that cover features that you perhaps haven't been using to best advantage. We also recommend the Quick Reference section and the Postscript to the Tutorial which includes a series of example documents, illustrating the ways in which the features of LocoScript 2 can be put to use.**

Converting a document from LocoScript '1' to LocoScript 2

A document that you have prepared using LocoScript '1' has to be converted before it can by processed by LocoScript 2. This conversion happens automatically the first time you edit the document using LocoScript 2 – so essentially all you have to do is to open it for editing.

Note: If the LocoScript '1' document you want to convert is stored on an 'old-style' 180k disc, LocoScript 2 will spot that it won't be able to store the converted document on the same disc and so before it even starts to edit the document, it will give you the option of saving the converted document on Drive M. Take this option and then, after you have finished work on the document, use LocoScript 2's Copy file option (see Session 7) to copy the version it stores on Drive M to one of your new 720k PCW9512 discs.)

Conversion takes place as you work down the document – slowing down movements you make, but only for this first time. After you have worked through the document once, all the changes will have been made and movements up and down the document will become very much faster.

In the process, your existing Layouts are re-specified as LocoScript 2 Stock Layouts, with Layout 0 becoming Stock Layouts 0 and 1; Layout 1 becoming Stock Layout 2; etc. However, if the original layout had more than 15 tabs, the text using the Layout will still be laid out in the same way (unless it used more than 30 tabs – LocoScript 2's maximum) but the Stock Layout won't have all the tabs. LocoScript 2 Stock Layouts have a maximum of 15 tabs.

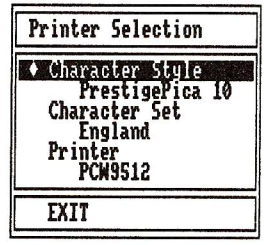
Another part of the conversion takes all the details of the page length, Header Zone and Footer Zone and works out the Paper Type for the document. It's impossible to be certain precisely what type of paper you had set up the document for in every case, so the conversion program makes the following assumptions:

- If the page length is 70 lines, the document uses A4 sheets
- If the page length is 66 lines, the document is set up for 11" continuous
- If the page length is anything else, it is a special type of continuous stationery which is given the same name as the document to identify it

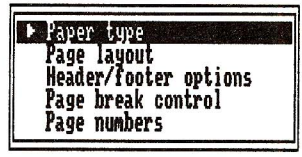
It also sets Top and Bottom gaps based simply on the sizes on the Header and Footer zones and the position you set for the Header Text.

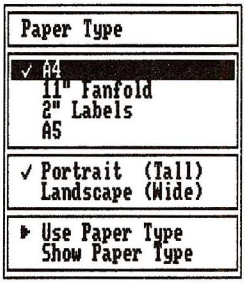
In general the conversion will give you the right results – but you could find that the footer, for example, is in a slightly different position. For this reason, LocoScript 2 automatically follows the conversion by displaying the Pagination Screen (ie. the screen that shows your Header and Footer text) and a message recommending you to check that the Paper type is OK.

We strongly recommend that you press [f6] and set the printer selected for the document to `PCW9512`. The document will then be correctly set up for printing on the built-in daisy-wheel printer. LocoScript '1' documents are set by default to a printer called `MATRIX` which is unsuitable for use with any of the supplied Printer Files. (How to do this is described in Session 23.)



We also recommend that you press [f5] to bring the Page menu onto the screen, then select `Paper Type` and press [ENTER]. This displays a menu of Paper Types, with your 'special' paper type (if any) shown as *document-name*`?`.





If the type of paper you use for this document is listed there, move the Menu cursor to this, press [⊞] and then press [ENTER] to select the `Use Paper Type` option at the bottom of the menu. You are then returned to the Pagination Screen.

If the type of paper you use isn't listed, select the type nearest to the one you want and press [⊞]: then move the Menu cursor to `Show Paper Type` and press [ENTER]. A second menu is then displayed.

Set the details in this menu so that they describe your paper. In particular, ensure that it is correctly shown as single sheet or continuous (point to the correct option and press [⊞] to set this) and that the Height of the paper is given correctly as the length of the paper in inches times 6. For example, for 2½" labels, you will want the Height to be 15. Also give you new paper type an appropriate name. (A full description of how to set up these details is given in Session 20.) You should then check and, if necessary, adjust the sizes of the Header and Footer zones – as described in Session 18.

When you have finished setting the details of the paper, press [ENTER] to return to the Pagination Screen. You can now set any other aspect of the Document Set-up you like. To return to the document itself, press [EXIT] and then [ENTER].

When you save this version of the document, you save a proper LocoScript 2 document. It will not need to be converted again. However, we should point out that you won't be able to edit or print it using LocoScript '1' any more. If you need a 'LocoScript 1' version, recover the old version of the document from Limbo before you go any further.

Using LocoScript add-on programs

LocoScript 2 cannot operate with the same add-on programs as LocoScript '1'. Instead, you need special 'LocoScript 2' versions of these programs.

There are (or will be) LocoScript 2 versions of third-party products which have been produced in consultation with Locomotive Software. However, where third-party products have been produced without reference to Locomotive, it is unlikely that these will work with LocoScript 2.

The LocoScript 2 versions of LocoMail and LocoSpell, the spelling checker and mail merge program for LocoScript are supplied on the PCW9512 LocoScript disc. You won't need to buy new versions of these programs. The new versions of LocoSpell and LocoMail are basically unchanged from the earlier versions.

Appendix II

Glossary

Alert	A type of message that LocoScript displays to draw your attention eg. to an error
ASCII	(American Standard Code for Information Interchange). System of codes used by most computers to represent characters. Consists of the upper and lower case letters, the numbers 0...9 and a range of punctuation symbols.
ASCII file	A file containing only simple ASCII text characters
Back-up copy	A copy of a disc, made as a reserve copy for use in case of accidents
Bail bar	The bar on the printer that holds the paper against the platen (rubber roller)
Block	An area of memory used to hold sections of text, ready for pasting into a document
Block editing	Changing the text by copying sections of text into Blocks and then pasting them back into the document in different positions
Bold	A way of styling text that makes characters darker when printed (each character is printed twice with the second printing shifted slightly to the right – cf. Double-strike)
Bottom Gap	The area at the bottom of a page in which the printer never prints
Booting LocoScript 2	Loading the LocoScript 2 program into the PCW's memory
Byte	Unit of storage space either in memory or on a disc. Each byte can hold one character
Caps Lock	Special key combination ([ALT]+[ENTER]) that tells LocoScript to automatically convert any lower case letters you type from here on to upper case – until you type [ALT]+[ENTER] again
Case (of a character)	Whether the character is a capital letter (upper case) or a small letter (lower case)
Centre tab ↔	Tab that aligns text segments so that the centre of each text segment is at the tab position

Centring (of a line)	Positioning the text on the line centrally between the margins
Centronics port	A connector into which you can plug a printer which has the Centronics type of interface. Also known as a Parallel port
Character keys	The keys on the keyboard that produce text characters
Character Pitch	The number of characters that can be typed per inch along a line
Character Set	The range of characters available
Character Style	The appearance of the characters – in particular, the Character Pitch they were designed for
'Commands' menu	A menu offering a choice of actions. An arrow or a diamond marks the action that will be carried out when [ENTER] is pressed
Continuous stationery	Paper on a continuous roll or 'fanfolded' with pages divided by a line of perforations
Carriage Return (↵)	Special character that tells LocoScript to start a new line
CR Extra Spacing	Additional line spacing following a Carriage Return
Cursor	Area of highlighting used either to mark what you are working on or to pick out items on the screen
Cursor keys	The four 'Arrow' keys – used to move Cursors
Daisy wheel printer	A printer that produces characters by hitting the 'petals' of a print wheel with a hammer
Data discs	Discs used to store documents and data files (cf. Start-of-day disc)
Decimal tab	Tab that aligns numbers in such a way that their decimal points are at the tab position
Default Layout	The Layout (ie. margins, character pitch, line spacing, etc.) that LocoScript uses when no other Layout has been specified
Disc Manager Screen	The display showing the documents, etc. on the discs currently in your disc drives
Document	The text of a letter, chapter of a book, report etc. as stored in memory or on disc
Document Set-up	Information stored alongside the text of a document that specifies eg. which type of paper the document has been prepared for

Dot matrix printer	A printer that produces characters by making patterns of dots on the paper
Double-spaced text	Text that has a blank line between each line of text
Double-strike	Making text darker by printing each character twice in the same position (cf. Bold)
Draft quality	The quality of text produced quickly by using a low density of dots (dot matrix printers only)
Drive M	The area of the PCW's memory used to store documents and data files (temporarily)
Editing	Changing the text of a document
End-of-page line	Special line used on the screen to mark the end of each page of the document
End-page-here (↓)	Special character which tells LocoScript to start a new page. Also known as a Form Feed (typed by holding down [ALT] and pressing [RETURN])
Exchange Text	Text that LocoScript will substitute for examples of the Find Text in the document (see Find Text)
Fanfold paper	Continuous stationery with the pages divided by lines of perforations and folded
File	Collection of related data or the text of a document, as stored in memory or on a disc
File Cursor	Band of highlighting on the Disc Manager Screen used to pick out the document or file you want to work with
Find Text	Text that you supply which LocoScript tries to match against the text in the document
Fixed Pitch text	Text in which the characters all take up the same amount of space along the line
Footer	Optional text printed at the bottom of one or more pages of your document
Footer Zone	Section of the page reserved for the Footer
Form Feed (↓)	Special character which tells LocoScript to start a new page. Also known in LocoScript as the End-page-here character (typed by holding down [ALT] and pressing [RETURN])
Formatting	The process of marking out a new blank disc ready to store data and documents
Function keys	Keys on the keyboard marked f1, f2 etc. used in particular to bring menus onto the screen

Group	Group of documents and data files on a disc. You can have up to eight different groups on each disc
Group cursor	Band of highlighting in the upper part of the Disc Manager Screen used to pick out the group you want to work with
Hard hyphen	Special type of hyphen that tells LocoScript not to break the line at this hyphen (typed by pressing ⊞ and then typing a hyphen)
Hard Space	Special type of space that tells LocoScript not to break the line at this space (typed by pressing ⊞ and then typing a space)
Header	Optional text printed at the top of one or more pages of your document
Header Zone	Section of the page reserved for the Header
Hidden files	Files on the Start-of-day disc which are vital to the running of LocoScript and so have been hidden to protect them against accidental erasure
High Quality	The quality of text produced using a high density of dots. Also known as NLQ or 'Near Letter Quality' (dot matrix printers only)
Indent tab (↦)	Special character that tells LocoScript to use the next tab position as the left margin for the text until the next Carriage Return (typed by holding down ALT and pressing TAB)
Information lines	The three lines at the top of the screen, displaying details of the current task and of the facilities that are available
Italic	A way of styling text in which the characters are slanted
Justification	Increasing the spaces between words so that the righthand edge of the text is straight as well as the left
K	A Kilobyte or 1024 bytes. Used to express the size of files, the amount of storage space on a disc etc.
Landscape	Orientation of a sheet of paper widthways instead of lengthways (see Portrait)
Layout	The specification of the margins, tabs etc. used to lay out text in the part of the document that uses this layout
Layout Editor	The part of LocoScript that helps you set up or change the Layout for the current text

Left Offset	The distance the print start position is moved to the right of its normal start position
Limbo files	Files that have been 'erased' but remain on disc until the storage space they occupy is needed to store another file
Line Break	The point in continuous text at which LocoScript decides to move onto the next line
Line Pitch	The number of standard lines per inch down the page – normally either 6 or 8
Line Spacing	The number of standard lines the printer advances between printing one line and printing the next (but see CR Extra Spacing)
Loading LocoScript 2	The process of loading the LocoScript 2 program from the Start-of-day disc into the PCW's memory so that you can start using the program.
LocoMail	The part of the LocoScript system which merges information eg. from data files into documents
LocoSpell	The part of the LocoScript system which checks words against dictionaries of standard spellings
Lower case characters	Small letters (cf. Upper case characters)
Menu cursor	Band of highlighting used to pick out options in menus
Memory disc	Section of the PCW's memory used as a temporary store for files and documents (see Drive M)
NLQ (Near Letter Quality)	The quality of text produced using a high density of dots. Also known as High Quality
Num Lock	Special key combination ([ALT]+[RELAY]) that sets/clears the use of the Textual Movement Keys as a numeric keypad
Page Break	The point in the text at which LocoScript decides to move onto the next page (shown on the screen by an End-of-page line)
Pagination Screen	The display showing the Header and Footer texts, from which any aspect of the Document Set-up can be changed
Pagination text	Text for use at the top and bottom of one or more pages of the document (see Header and Footer)
Paper Type	Specification of Height, Width, etc. of a particular type of paper

Paragraph	Block of text separated from other text by one or more lines of 'white'
Parallel Port	A connector into which you can plug a printer which has a 'Parallel' interface. Often described as a Centronics port
Phrases	Short pieces of text, including word-processing codes, stored on disc for easy insertion into documents
PHRASES.STD	File of Phrases that are automatically made available as part of loading LocoScript 2
Pitch	Number of characters per inch on a line
Platen	Rubber roller in the printer against which paper is held
Portrait	Orientation of the paper lengthways (see Landscape)
Printer Control State	Phase of using LocoScript in which all actions affect how the printer is set up (entered automatically when you load paper into the printer or by pressing [PTR])
Print wheel	Interchangeable unit on a Daisy wheel printer with characters on each 'petal'
Proportional Spacing	System of positioning characters so that wide characters take more space on a line than narrow characters – equivalent on average to 12 characters per inch
Relaying	Re-adjusting how the text is laid out to take account of changes that have been made
Resetting	Restarting LocoScript 2 by pressing [SHIFT], [EXTRA] and [EXIT]. Equivalent to switching off and switching on again
Reverse	A way of styling text so that words are shown on the screen as dark text against a light background
Right Aligning	Positioning text so that the last character is at the righthand margin
Right tab	A tab that marks the position of the last character in any segment of text using this tab
RS232 Interface	The standard type of Serial Interface (see Serial Port)
Ruler Cursor	Marker on the Ruler Line showing how far across the page you are working
Ruler Line	Line displaying the current set of margins and tabs
Scale	Character Pitch used to mark out the Ruler Line

Scrolling	Moving the screen display up, down, left or right to see other parts of the document or other lines of files
Serial Port	Socket into which you can plug a printer that has a serial (RS232) interface
Selection menu	Menu that displays details of the document(s) you have picked out to work on, so that you can confirm your selection
Settings	File of general information about the facilities of your system (stored as SETTINGS.STD on the Start-of-day disc) – in particular, it records the types of paper you use and the printer and paper LocoScript is initially set up to print on
Settings menu	Menu of options that can be either 'Set' or 'Cleared'. Ticks mark the options that are set
Simple tab	A tab that marks the position of the first character in any segment of text using this tab
Single sheet stationery	Separate sheets of paper
Single-spaced text	Text that has no extra space between the lines
Soft Hyphen	Special type of hyphen that can be inserted into a long word, giving LocoScript the option of breaking the line at this hyphen. The hyphen only appears when the line is broken at this point (typed by pressing [⊡] and then typing a hyphen)
Soft Space	Special type of space that can be inserted into a long word, giving LocoScript the option of breaking the line at this space (typed by pressing [⊡] and then typing a space)
Start-of-day disc	Disc holding the programs and data files read into memory when LocoScript 2 is loaded (cf. Data discs)
Stock Layout	Pattern for a Layout stored as part of the Document Set-up
Subscript	Character written below the normal line of the text
Superscript	Character written above the normal line of the text
Super Shift	Special key combination that puts the keyboard into a particular character mode, eg. Greek or Symbol (typed by holding down [ALT] and pressing one of Function keys)
System files	Special files that LocoScript uses, usually stored on Drive M. Details of these files are never displayed.

Template (TEMPLATE.STD)	Document used as the pattern for new documents, especially those in the same group
Text Cursor	Marker showing the point in the document at which you are currently working
Textual Movement Keys	Keys on the keyboard marked Para, EOL etc. used to move the Text cursor through the document
Toggle	Using the same action to switch from 'Set' to 'Clear' or from 'Clear' to 'Set'
Top Gap	The area at the top of a page in which the printer never prints
Tractor Feed	The part of the printer designed for handling continuous stationery
Underline	Underlining both words and spaces (cf. Word Underline)
Upper case characters	Capital letters (cf. Lower case characters)
Widows and Orphans	Single lines of paragraphs separated from the rest of the paragraph by a page break
Wildcard character (?)	Special character used in Find Text to match any character including space
Word processor codes	Special codes embedded in text to tell LocoScript how the text should be laid out and styled
Word Underline	Underlining of the words but not the spaces between the words (cf. Underline)
Word Wrap	Automatic movement of parts of a word onto the next line because there isn't room for the whole word on the current line

Appendix III

LocoScript 2 Characters

LocoScript 2 supports a very wide range of characters and symbols, making it possible to type not only in English but also mathematical equations and text in almost every European language. All of these characters can be displayed on the screen, but the range of characters you can print depends on the printer you use.

To type each character, you have to press one of the Character keys on the keyboard, often together with another key. You can see how to type the commonest characters just by looking at the keyboard. The letters a...z, the digits 0...9 and characters like hyphen, comma and full stop are typed by just pressing the key marked with this character. Other common characters – in particular, the capital letters A...Z – are typed by holding down the SHIFT key while pressing the key marked with the appropriate character. Where the key has two characters engraved on it, the lower character is the one that is typed when the key is pressed on its own: the upper one is only typed when SHIFT is held down as well.

Further characters are typed by holding down the EXTRA key or the ALT key at the same time as pressing either the Character key on its own or together with SHIFT. Characters that you produce in this way are not engraved on the keys themselves: they are the ones listed in the table below with a key combination starting EXTRA, ALT or SHIFT ALT. Taking an example from the top of the table, the key combination for an upper case ae diphthong is given as SHIFT ALT A – telling you to hold down both the SHIFT and the ALT keys at the same time as pressing the 'A' letter key.

The key combinations using SHIFT, ALT and EXTRA enable you to type the vast majority of the characters – but not all of them. To type Greek characters, Cyrillic characters and a number of special symbols, you have first to put the keyboard into a special mode known as a 'Super Shift'. With each Super Shift, different characters are produced when you press the key on its own, or with either SHIFT, ALT or SHIFT and ALT. The characters produced when you press the key with EXTRA stay the same. For example, if you put the keyboard into its Greek mode, pressing the A key types a lower case alpha – not a lower case a – but pressing EXTRA E still gives you an acute accent.

The characters for which you need to put the keyboard into a Super Shift can be picked out from the table below by looking for Greek:, Cyrillic: or Symbol: at the beginning of the key combination or in the heading to the section. For example, the heading for the section of the table on Greek letters tells you that the keyboard has to be put into its Greek mode before you type any of the given key combinations.

Putting the keyboard into its 'Greek' mode doesn't mean that all you can type are Greek letters. You can still type standard Roman Script letters and many of the special letters and symbols – but you will generally have to use a different key combination. All the characters that were typed by just pressing the key or the key

together with [SHIFT] can be typed, simply by holding down [ALT] at the same time as pressing the given key combination. And as we mentioned above, all the characters that are typed by pressing a key together with [EXTRA] can still be typed using the same key combination. However, the characters that are typed by holding down [ALT] or [SHIFT] and [ALT] at the same time as pressing the key are temporarily 'lost' to you. To type these again – and to use the usual key combinations for the common characters – you have to put the keyboard back into its 'Normal' mode.

The keyboard is put into a different mode by pressing a special key combination called a 'Super-Shift' as follows:

- Symbol: [ALT] [f7]
- Cyrillic: [ALT] [f5]
- Greek: [ALT] [f3]
- Normal: [ALT] [f1]

So if, for example, you wanted to type a line of Greek in the middle of your document, you would press [ALT] [f3] immediately before you wanted to type the Greek characters and [ALT] [f1] when you had finished.

Note: Moving the Text cursor to a part of a document where you earlier used one of the special modes of the keyboard doesn't automatically put the keyboard into this special mode. So if you want to add to your line of Greek, say, you will have to put your keyboard into its Greek mode by pressing [ALT] [f3] as before.

The characters on the supplied printwheel

The England Prestige Pica 10 printwheel supplied with your PCW9512 and other printwheels for the built-in printer each have 100 petals. The following table gives the characters available on the supplied Prestige Pica 10 printwheel along with the key combinations needed to type these characters.

Symbol	Description	Key combination
a...z	Lower case letters	Unshifted *letter*
A...Z	Upper case letter	[SHIFT] *letter*
0...9	Numerals	Unshifted *number*
–	Hyphen	Unshifted –
,	Comma	Unshifted ,
.	Full stop	Unshifted .
;	Semicolon	Unshifted ;
:	Colon	[SHIFT] ;
!	Exclamation mark	[SHIFT] 1
?	Question mark	[SHIFT] /

Symbol	Description	Key combination
=	Equals	Unshifted =
÷	Divide	EXTRA Z
&	Ampersand	SHIFT 7
'	Apostrophe	SHIFT 6
"	Double quote	SHIFT 2
_	Underline	SHIFT –
*	Asterisk	SHIFT 8
#	Hash	Unshifted #
/	Slash	Unshifted /
(	Open parenthesis	SHIFT 9
)	Close parenthesis	SHIFT 0
[	Open square bracket	Unshifted [
]	Close square bracket	Unshifted]
@	At	SHIFT ½
|	Vertical bar	Unshifted |
£	Pound	SHIFT 3
$	Dollar	SHIFT 4
+	Plus	SHIFT =
½	Half	Unshifted ½
¼	One quarter	SHIFT [
⅓	One third	Symbol: =
⅔	Two thirds	Symbol: SHIFT =
¾	Three quarters	SHIFT]
2	Superscript 2	Symbol: 2
3	Superscript 3	Symbol: 3
<	Less than	SHIFT |
>	Greater than	SHIFT #
°	Degrees	EXTRA H
%	Percent	EXTRA 5

The full character set

The following table gives all the characters that it is possible to type using LocoScript 2, together with details of the keys you have to press to type these characters. Where the key combination starts with Greek:, Cyrillic: or Symbol:, this means that you have to be using the keyboard with this Super Shift.

Note: The table gives the key combination only for the lower case version of any letter. To type the corresponding Capital letter, hold down [SHIFT] and then press the key combination for the lower case letter.

Alphanumerics

Symbol	Description	Key combination
a...z	Lower case letters	Unshifted letter
0...9	Numerals	Unshifted number (Also Greek and Cyrillic)
0	Zero (no slash)	[ALT]0
æ	ae diphthong	[ALT]A
œ	oe diphthong	[ALT]Z

Accents

Accented letters are entered by typing the accent followed by the letter you want to apply the accent to. LocoScript 2 automatically 'amalgamates' the accent with the letter, both on the screen and, if possible, on the printer as well.

Note: The print wheel supplied with the PCW9512 printer does not have any accents on it and so accented characters cannot be printed using this wheel. Other print wheels may be available for the built-in printer that do have accents or accented characters on them. A dot-matrix printer attached to your PCW should be able to produce a wide range of accented characters, but not necessarily all the ones listed here.

´	Acute	[EXTRA]E
`	Grave	[EXTRA]T
^	Circumflex	[EXTRA]U
¨	Umlaut or diaresis	[EXTRA]W
ˇ	Caron or hacek	[EXTRA]I
˙	Dot	[EXTRA]Q
~	Tilde	[EXTRA]P
˘	Breve	[EXTRA]S
˝	Double acute	[EXTRA]R
°	Ring	[EXTRA]A
¯	Macron	[EXTRA]O
‟	Double grave	[EXTRA]Y
¸	Cedilla	[EXTRA]D
˛	Ogonek	[EXTRA]F
‚	Latvian tail	[EXTRA]G
/	Stroke	[EXTRA]/

Note: Latvian lower-case 'g tail's have the accent **above** the letter – not below.

Greek characters (typed using the Greek Super Shift)

Symbol	Description	Key	Symbol	Description	Key
α	Alpha	A	ξ	Xi	X
β	Beta	B	ο	Omicron	O
γ	Gamma	G	π	Pi	P
δ	Delta	D	ρ	Rho	R
ε	Epsilon	E	σ	Sigma	S
ζ	Zeta	Z	ς		V
η	Eta	H	τ	Tau	T
θ	Theta	Q	υ	Upsilon	U
ι	Iota	I	φ	Phi	F
κ	Kappa	K	ϕ		J
λ	Lambda	L	χ	Chi	C
μ	Mu	M	ψ	Psi	Y
ν	Nu	N	ω	Omega	W

Cyrillic characters (typed using the Cyrillic Super Shift)

а	As	A	п	Pokoi	P
б	Buki	B	р	Rtsui	R
в	Vyedi	V	с	Slovo	S
г	Glagol	G	т	Tverdo	T
ґ	Glagol (Ukraine)	–	у	U	U
д	Dobro	D	ф	Fert	F
е	Yest	E	х	Kherr	X
є	Yest (Ukraine)	½	ц	Tsui	C
ж	Zhivete	|	ч	Tsherv	H
з	Zemla	Z	ш	Sha	W
и	Ishe	I	щ	Shtsha	]
	Ishe breve	J	ъ	Yerr	=
і	I (Ukraine)	/	ы	Yerui	Y
к	Kako	K	ь	Yer	;
л	Liudi	L	э	E	#
м	Muislete	M	ю	Yu	[
н	Nash	N	я	Ya	Q
о	On	O	№	Number	SHIFT 3

Other special language characters

Symbol	Description	Key combination
đ	D stroke	[ALT]D
ð	Eth	[ALT]F
ħ	H stroke	[ALT]H
ı	Dotless i (Turkish)	[ALT]I
ij	IJ	[ALT]J
ĸ	k (Greenland)	[ALT]K
ŀ	L dot	[ALT].
ŀ	L'	[ALT],
ł	L stroke	[ALT]L
ł	Curly l	[SHIFT] [ALT]I
ŋ	Eng	[ALT]N
ø	O stroke	[ALT]O
ß	Scharfes S	[ALT]S or[SHIFT] [ALT]S
þ	Thorn	[ALT]P
ŧ	T stroke	[ALT]T

Textual Symbols

-	Hyphen	Unshifted - (Also Greek)
,	Comma	Unshifted , (Also Greek and Cyrillic) or [SHIFT], (Also Greek)
.	Full stop	Unshifted . (Also Greek and Cyrillic) or [SHIFT]. (Also Greek)
;	Semicolon	Unshifted ; (Also Greek: Cyrillic [SHIFT],)
:	Colon	[SHIFT]; (Also Greek: Cyrillic – [SHIFT].)
...	Ellipsis	[EXTRA]C
–	Dash	[ALT]–
!	Exclamation mark	[SHIFT]1 (Also Greek and Cyrillic)
?	Question mark	[SHIFT]/ (Also Greek: Cyrillic – [SHIFT]4)
	Space	Space Bar (All variations)
&	Ampersand	[SHIFT]7 (Also Greek)
'	Apostrophe	[SHIFT]6 (Also Greek and Cyrillic)
‘	Open single quote	[ALT]6
’	Close single quote	[SHIFT] [ALT]6
"	Double quote	[SHIFT]2 (Also Greek and Cyrillic)
“	Open double quote	[ALT]2
”	Close double quote	[SHIFT] [ALT]2

Symbol	Description	Key combination
_	Underline	SHIFT – (Also Greek)
*	Asterisk	SHIFT 8 (Also Greek)
#	Hash	Unshifted # (Also Greek)
/	Slash	Unshifted / (Also Greek)
(	Open parenthesis	SHIFT 9 (Also Greek and Cyrillic)
)	Close parenthesis	SHIFT 0 (Also Greek and Cyrillic)
[	Open square bracket	Unshifted [(Also Greek)
]	Close square bracket	Unshifted] (Also Greek)
{	Open curly brace	EXTRA [
}	Close curly brace	EXTRA]
@	At	SHIFT ½ (Also Greek)
∴	Therefore	EXTRA V
∵	Because of	EXTRA B
℅	Care of	SHIFT ALT C
©	Copyright	ALT C
®	Registered	ALT R
™	Trade mark	SHIFT ALT R
°	Open circle	EXTRA N
•	Bullet	EXTRA M
¶	Paragraph (Pilcrow)	SHIFT ALT –
§	Section	EXTRA \
†	Dagger	ALT =
‡	Double dagger	SHIFT ALT =
|	Vertical bar	Unshifted \

Continental textual symbols

‹	Single guillemot	SHIFT ALT \
›		SHIFT ALT #
«	Double guillemot	ALT \ (Cyrillic: SHIFT 7)
»		ALT # (Cyrillic: SHIFT 8)
„	German open double quote	ALT 3
¿	Open query	SHIFT ALT /
¡	Open shriek	SHIFT ALT 1
ª	Feminine ordinal	SHIFT ALT 7
º	Masculine ordinal	SHIFT ALT 8

Currency symbols

Symbol	Description	Key combination
£	Pound	SHIFT 3 (Also Greek)
$	Dollar	SHIFT 4
¢	Cent	SHIFT ALT 4
¤	International currency symbol	SHIFT ALT 3
₣	Franc	ALT 4
₺	Turkish pound	ALT 9
ƒ	Florin	ALT 1
¥	Yen	ALT 8
₧	Peseta	ALT 5

Mathematical symbols

+	Plus	SHIFT = (Also Greek)
–	Minus	Unshifted – (Also Greek)
*	Multiply	SHIFT 8 (Also Greek)
×	Times	EXTRA X
÷	Divide	EXTRA Z
/	Divide (Slash)	Unshifted / (Also Greek)
↑	Exponentiation	Symbol: Q
=	Equals	Unshifted =
|	Modulus	Symbol: |
\	Backslash	ALT ½
½	Half	Unshifted ½ (Also Greek)
⅛	One eighth	Symbol: [
¼	One quarter	SHIFT [(Also Greek)
⅓	One third	Symbol: =
⅜	Three eighths	Symbol:]
⅝	Five eighths	Symbol: SHIFT [
⅔	Two thirds	Symbol: SHIFT =
¾	Three quarters	SHIFT] (Also Greek)
⅞	Seven eighths	Symbol: SHIFT]
1/	One upon	EXTRA ½
^{0} ... ^{9}	Superscript 0...9	Symbol: 0...9
^{n}	Superscript n	Symbol: –
·	Decimal point	EXTRA .
±	Plus or minus	EXTRA L
∓	Minus or plus	EXTRA ;

Symbol	Description	Key combination
<	Less than	SHIFT | (Also Greek)
>	Greater than	SHIFT # (Also Greek)
≤	Less than or equal	EXTRA –
≠	Not equals	EXTRA #
≥	Greater than or equal	EXTRA =
≃	Approx. equal to	Symbol: P
≈	Nearly equal to	Symbol: SHIFT P
≪	Much less than	Symbol: SHIFT |
~	Asympotically equal to	Symbol: SHIFT –
≫	Much greater than	Symbol: SHIFT #
≡	Equivalent	Symbol: O
≅	Congruent	Symbol: SHIFT O
∝	Proportional to	Symbol: SHIFT 2
°	Degrees	EXTRA H
′	Minutes	EXTRA J
″	Seconds	EXTRA K
%	Percent	SHIFT 5 (Also Greek and Cyrillic)
‰	Per thousand	SHIFT ALT 5
∥	Parallel	Symbol: #
⊥	Perpendicular	Symbol: SHIFT 1
∞	Infinity	Symbol: SHIFT 0
√	Root	Symbol: SHIFT ;
∠	Angle	Symbol: J
∡		Symbol: SHIFT J
∃	Exists	Symbol: SHIFT A
∋	Such that	Symbol: SHIFT S
∀	Universal	Symbol: A
∨	Logical Or	Symbol: SHIFT H
∧	Logical And	Symbol: H
¬	Logical Not	Symbol: SHIFT 9
∅	Empty set	Symbol: ;
∩	Intersection	Symbol: G
∪	Union	Symbol: SHIFT G
⊂	Proper subset	Symbol: D
⊃	Proper superset	Symbol: SHIFT D

Symbol	Description	Key combination
⊆	Reflex subset	Symbol: F
⊇	Reflex superset	Symbol: SHIFT F
∈	Element	Symbol: S
⌊	Floor	Symbol: K
⌋		Symbol: L
⌈	Ceiling	Symbol: SHIFT K
⌉		Symbol: SHIFT L
⊕	Circle plus (special operator)	Symbol: SHIFT 7
⊗	Circle times (special operator)	Symbol: SHIFT 6
Σ	Sum	Symbol: M
Π	Product	Symbol: SHIFT M
∫	Integral	Symbol: U
∮	Contour integral	Symbol: I
∫	Integral (large)	Symbol: SHIFT U
∮	Contour integral (large)	Symbol: SHIFT I
∂	Partial differential	Symbol: SHIFT 4
∇	Gradient	Symbol: SHIFT 3
/	Slash (large)	ALT /
(	Bracket (large)	SHIFT ALT 9
)		SHIFT ALT 0
[	Square bracket (large)	ALT [
]		ALT]
{	Curly brackets (large)	SHIFT ALT [
}		SHIFT ALT]

Symbol	Key combination	Symbol	Key combination
↑	Symbol: Q	⇓	Symbol: SHIFT E
↕	Symbol: W	⇐	Symbol: SHIFT R
↓	Symbol: E	⇔	Symbol: SHIFT T
←	Symbol: R	⇒	Symbol: SHIFT Y
↔	Symbol: T	▲	Symbol: C
→	Symbol: Y	▼	Symbol: SHIFT C
⇑	Symbol: SHIFT Q	◀	Symbol: V
⇕	Symbol: SHIFT W	▶	Symbol: SHIFT V

Special Textual Symbols

Symbol	Description	Key combination
⊙	Circle dot (arrow out)	Symbol: SHIFT 5
○	Large open circle	Symbol: Z
●	Large bullet	Symbol: SHIFT Z
□	Box	Symbol: X
■	Filled Box	Symbol: SHIFT X
◊	Diamond	EXTRA ,
✓	Tick	Symbol: N
×	Cross	Symbol: SHIFT N
✱	Star	Symbol: SHIFT 8
⓪... ⑨	Circled digits	EXTRA 0...9
☺	Smiling face	Symbol: /
☻	Black smiling face	Symbol: SHIFT /
♂	Mars	Symbol: SHIFT B
♀	Venus	Symbol: B
♣	Clubs	Symbol: SHIFT ,
♦	Diamonds	Symbol: ,
♥	Hearts	Symbol: .
♠	Spades	Symbol: SHIFT .
♪	Note	Symbol: ½
♫	Two-note	Symbol: SHIFT ½

Special key combinations

As well as the key combinations that produce characters, there are also some special key combinations which modify which characters are produced. These are:

- The Super-Shifts ALT f1, ALT f3, ALT f5 and ALT f7 – which put the keyboard into a different character mode (Normal, Greek, Cyrillic and Symbol, respectively)
- The Caps Lock ALT ENTER – which sets or clears the conversion of all lower case (small) letters to their upper case counterpart
- The Num Lock ALT RELAY – which sets or clears the use of the Textual Movement keys and Cursor keys as a numeric keypad
- Indent Tab – ALT TAB
- Form Feed – ALT RETURN
- SHIFT EXTRA EXIT – which resets your machine

Characters for names within LocoScript

A number of items within LocoScript have names:

- Documents
- Groups
- Discs
- Layouts
- Paper Types
- Printers
- Character Sets
- Character Styles

The names used for your printers and their Character Sets and for the supplied range of Paper Types are set up for you. However, you get to choose the names for everything else and there are rules about how these names should be constructed – in particular, about the range of characters and the number of characters that can be used. By no means all the characters that you can type using LocoScript 2 can be used in these names.

The items split into two groups, in terms of the range of characters that can be used in their names. The first group comprises Documents, Groups and Discs: the second group comprises Layouts, Paper Types and Character Styles. We list the characters that can be used below – together with a brief outline of the other rules that apply to these names.

Documents, Groups and Discs

The names of Documents, Groups and Discs are restricted to the following range of characters:

- the capital letters A...Z
- the digits 0...9
- the characters " # $ % ' @ _ § { } ½ ◊

No other characters may be used: in particular, you cannot include any spaces in these names.

Note: Document and Disc names have a main part which is between one and eight characters long, to which you can add an extension of up to three characters which you separate from the main part by a full stop. The names for Groups are simply between one and eight characters long.

Layouts, Paper Types and Character Styles

A very much wider range of characters can be used in the names of Layouts, Paper Types and Character Styles. Grouping these in the same way as we have done in the table above, the characters are:

- a...z, A...Z, 0...9, 0 , æ, Æ, œ, Œ
- these accented characters only: á...ú, à...ù, êîô, ãõ, ç, ÄÖÜ, äöü, Å, å, Ñ, ñ
- all the Greek characters
- all the 'Other Special Language Characters'
- the following Textual Symbols: - , . ; : ... ! ? (space) & ' " _ * # / ( ) [ ] { } @ © ® ™ § ¶ ∘ •
- the following Continental Textual Symbols: « » ¿ ¡ ª º
- the following Currency Symbol: $
- the following Mathematical Symbols: + – * / = | \ ½ . < > ° %

The principal groups of characters you can't use are:

- the Cyrillic characters
- many of the special mathematical symbols
- the special textual symbols

Note: Each of these names can be up to 12 characters long.

Appendix IV

Quick reference

The following pages give brief instructions on how to carry out the commonest actions within LocoScript 2. The instructions are designed to be used as an 'aide-memoire', reminding you of the steps rather than going through the processes in detail. If you need further help on any action, then you should work through the relevant part of the tutorial. The session you want is given in brackets at the top of each set of instructions.

Word-processing is a complex activity, so there is a long list even of the most common actions. To make the instructions you want reasonably easy to find, we have grouped the actions under different sub-headings as follows:

Loading LocoScript 2	
Block editing:	Copying text to a block Inserting a Block Inspecting Blocks
Checking spelling:	Correcting a whole document Correcting part of a document Correcting a single word Removing errors from the User Dictionary
Discs:	Changing Discs Formatting a new disc Copying a disc
Disc Management:	Copying documents Erasing documents Moving documents Renaming documents Running the Disc Manager from the Editor Displaying Limbo/Hidden files
Documents:	Creating a document Editing a document Making an ASCII file
Document Set-up:	Scope Gaining access to the Document Set-up
Filling Master documents:	Filling from the keyboard Filling from a data file Using a data file with a separate Record Pattern
Headers and Footers (Pagination text):	Editing the Pagination Layout Setting how the Headers and Footers are used Inserting page numbers Setting First Page numbers of a series of documents

Inserting text:	Inserting text from another document Inserting a whole document
Layouts:	Scope Using a New Layout Using a Stock Layout Changing the Layout Changing a Stock Layout Setting Margins Setting Tabs Clearing Tabs Showing Rulers
Page breaks and Line breaks:	Allowing a line break in the middle of a word Preventing a line break at a space or a hyphen Starting a new page Keeping lines together Setting the general rules for Page Breaks
Paper:	Setting Document Paper Type Setting Printer Paper Type Setting Page Layout
Phrases:	Loading a set of Phrases Setting up a new Phrase Inserting a Phrase Saving a set of Phrases Inspecting Phrases
Positioning text:	Centring a line of text Moving a line to the right Indenting a paragraph
Printing:	Printing one copy Printing multiple copies Printing selected pages Entering Printer Control State Reprinting Setting Left Offset Suspending/Resuming printing
Search and Replace:	Find Exchange
Text preparation:	Styling text Displaying word-processing codes Setting character size Setting line spacing Setting/Clearing Justification Moving round the document

Loading LocoScript 2 (page 19)

1 Switch on or reset your PCW

2 Insert your Start-of-Day disc in Drive A with Side 1 uppermost

3 If the computer doesn't automatically start reading from the disc, press the Space Bar.

4 Wait while the computer reads the LocoScript program off this disc. (The light on the disc drive flashes on and off.)

5 Remove the Start-of Day disc from the drive and put it to one side.

Block editing

Copying text to a block (Session 6)

- while editing a document

1 Move the Text cursor to the start of the section of text

2 Press [COPY]

3 Move the Text cursor to the end of the section of text

4 Press [COPY] to retain the original text; press [CUT] to delete the original text

5 Type the number of the Block (0...9)

Inserting a Block (Session 6)

- while editing a document

1 Position the Text cursor where the Block is to be inserted

2 Press [PASTE]

3 Type the number of the Block (0...9)

Inspecting Blocks (Session 6)

- while editing a document or from the Disc Manager Screen

1 Press [f1] to bring the Actions menu onto the screen

2 Select `Show blocks`

3 Press [ENTER]

A menu showing the first few words of each block is then displayed. Press [CAN] when you have finished with this menu.

Checking Spelling

Note: The spelling of a document is checked while the document is being edited.

Correcting the whole document (Session 8)

1 Press [f7] to bring the Spell menu onto the screen

2 Select `All of document`

3 Press [ENTER]

4 Select whichever option is appropriate each time LocoSpell finds a mistake

Correcting part of the document (Session 8)

1 Position the Text cursor where you want the checking to start

2 Press [f7] to bring the Spell menu onto the screen

3 Select `Just forwards from here`

4 Press [ENTER]

5 Select whichever option is appropriate each time LocoSpell finds a mistake

Correcting a single word (Session 8)

1 Position the Text cursor on the word you want to check

2 Press [SP.CHK]

3 If necessary, pick out the word you want from the dictionary

4 Press [ENTER]

Removing errors from the User Dictionary (Session 8)

1 Press [f7] to bring the Spell menu onto the screen

2 Select `User dictionary upkeep`

3 Press [ENTER]

4 Move the Menu cursor to the misspelt word

5 Press [-]

6 Press [EXIT]

Discs

All the actions described here are carried out from the Disc Manager Screen.

Changing Discs (Session 2)

1 Change the disc in the drive
2 Press [f7]

Formatting a new disc (Session 7)

1 Remove all discs from your disc drives
2 Press [f2] to bring the Disc menu onto the screen
3 Select `Format disc`
4 Press [ENTER]
5 Follow the on-screen instructions

Copying a disc (Session 7)

1 Remove all discs from your disc drives
2 Press [f2] to bring the Disc menu onto the screen
3 Select `Copy disc`
4 Press [ENTER]
5 Follow the on-screen instructions

Disc Management

These operations are carried out from the Disc Manager Screen, unless otherwise stated.

Copying a document (Session 7)

1 Pick out the document with the File cursor
2 Press [f3] to bring the File menu onto the screen
3 Select `Copy file` and press [ENTER]
4 Pick out the group where the copy is to be stored with the Group cursor
5 Press [ENTER]
6 Check and, if necessary, correct the details in the Selection menu
7 Press [ENTER]

Erasing a document (Session 7)

1 Pick out the document with the File cursor
2 Press [f3] to bring the File menu onto the screen
3 Select `Erase file` and press [ENTER]
4 Check and, if necessary, correct the details in the Selection menu
5 Press [ENTER]

Moving a document (Session 7)

1 Pick out the document with the File cursor
2 Press [f3] to bring the File menu onto the screen
3 Select `Move file` and press [ENTER]
4 Pick out the group where the document is to be stored with the Group cursor
5 Press [ENTER]
6 Check and, if necessary, correct the details in the Selection menu
7 Press [ENTER]

Renaming a document (Session 7)

1 Pick out the document with the File cursor
2 Press [f3] to bring the File menu onto the screen
3 Select `Rename file` and press [ENTER]
4 Fill in the new name in the Selection menu
5 Press [ENTER]

Running the Disc Manager from the Editor (Session 7)

1 Press [f1] to bring the Actions menu onto the screen
2 Select `Disc manager` and press [ENTER]

You can now carry out many of the actions normally carried out from the Disc Manager Screen. However, you can't change any of the information held in the SETTINGS.STD file, you can't open another document for editing and you must not remove the disc holding the document you are editing.

When you have finished using the Disc Manager, press [EXIT] to return to the Editor.

Showing Limbo/Hidden Files (Session 7)

1 Press [f8] to bring the Options menu onto the screen
2 Set `Show Limbo/Hidden files`
3 Press [ENTER]

Documents

The actions described here are all carried out from the Disc Manager Screen.

Creating a document (Session 3)

1 Pick out the group in which the new document is to be stored with the Group cursor

2 Press **C**

3 Replace the name in the Selection menu that LocoScript suggests with the name you have chosen for the new document. Then press [ENTER]

The new document is then opened for editing.

Editing a document (Session 5)

1 Pick out the document you want to edit with the File cursor

2 Press **E**

3 Check and, if necessary, correct the details in the Selection menu. Press [ENTER]

Making an ASCII file (Session 15)

1 Pick out the document you want to make an ASCII version of

2 Press [f1] to bring the Actions menu onto the screen

3 Select `Make ASCII file.` Press [ENTER]

4 Pick out the group in which the ASCII file is to be stored with the Group cursor. Press [ENTER]

5 Fill in the name you want for the ASCII file and check the details in the Selection menu. Press [ENTER]

Document Set-up

Scope (Session 19)

- Printer and character set selected for document (see Printing)
- Paper Type selected for document (see Paper)
- Page Layout (see Paper)
- Header and Footer text (see Headers and Footers)
- Header and Footer Layout (see Headers and Footers)
- Rules for applying Headers and Footers (see Headers and Footers)
- The Stock Layouts (see Layouts)
- Rules for Page Breaks (see Page breaks and Line breaks)
- First Page (and Total Pages) numbers (see Headers and Footers)

Gaining access to the Document Set-up (Session 18)

Note: You can only gain access to the Document Set-up while you are editing the document.

1 Press [f1] to bring the Actions menu onto the screen

2 Select `Document setup`

3 Press [ENTER]

LocoScript then displays the special Pagination Screen, together with the array of menus that help you change the various aspects of the Document Set-up.

Filling Master documents

The actions described here are carried out from the Disc Manager Screen

Filling from the keyboard (Session 21)

1 Pick out the Master document with the File cursor

2 Press **F**

3 Check the details in the Selection menu. Press [ENTER]

4 Each time LocoMail pauses at a 'blank', type the information that is to be inserted; then press [ENTER]

5 Choose whther to save, print, edit or discard the filled document

6 Choose whether to 'Fill again' or 'Finish'. Press [ENTER]

Filling from a data file (Session 21)

Manual method:

1 Pick out the Master document with the File cursor

2 Press **M**

3 Pick out the Data file with the File cursor

4 Press [ENTER]

5 Check the Selection menu

6 Select Manual. Press [ENTER]

7 Choose whether to save, print, edit or discard the filled document

Automatic method:

1 Pick out the Master document with the File cursor

2 Press **M**

3 Pick out the Data file with the File cursor

4 Press [ENTER]

5 Check the details in the Selection menu

6 Select Automatic. Press [ENTER]

Using a data file with a separate Record Pattern (Session 22)

1 Pick out the Master document with the File cursor

2 Press **M**

3 Pick out the Record Pattern with the File cursor

4 Press [ENTER]

5 Check the details in the Selection menu

6 Select Manual/Automatic. Press [ENTER]

7 Pick out the Data file with the File cursor

8 Press [ENTER]

Headers and Footers (Pagination text)

Editing the Pagination Layout (Sessions 17 and 12)

- from the Pagination Screen

1 Press [f2] to bring the Layout menu onto the screen
2 Select `Change layout`
3 Press [ENTER]

This puts you into the Layout Editor. You can now edit the Layout in the normal way.

When you have finished using the Layout editor, press [EXIT] to return to the Pagination Screen.

Setting how the Headers and Footers are used (Session 17)

- from the Pagination Screen

1 Press [f5] to bring the Page menu onto the screen
2 Select `Header/footer options` and press [ENTER]
3 Set the use to which Header/Footer 1 will be put
4 Set those Headers and Footers that will be required on the First and Last pages of the document
5 Set the source of the Footer that will be used on single-page documents
6 Press [EXIT] and then [ENTER]

Inserting page numbers (Session 17)

To insert the current page number:

1 Press [⊞] and type `PN`
2 Type as many <s, >s or =s as are necessary to reserve space for the page number

To insert the Total Pages number:

1 Press [⊞] and type `LPN`
2 Type as many <s, >s or =s as are necessary to reserve space for the number

Setting First Page numbers of a series of documents (Session 19)

- from the Disc Manager Screen

1 Pick out the first document of the series with the File cursor
2 Press [f5] to bring the Document menu onto the screen
3 Select `Set first pages` and press [ENTER]
4 Select `Set counter=first page` and press [ENTER]
5 Pick out the next document with the File cursor and press [ENTER]
6 Select `Set first page=counter` and press [ENTER]
7 Repeat Steps 5 and 6 until all documents have been selected
8 Press [CAN]

Inserting text

The actions described here are carried out while editing a document.

Inserting text from another document (Session 15)

Note: The text to be inserted must have been copied to a Block in a previous edit and not overwritten by other text.

1 Position the Text cursor where the text is to be inserted

2 Press [PASTE]

3 Type the number of the Block holding the text (`0 . . . 9`)

Inserting a whole document (Session 15)

1 Position the Text cursor where the document is to be inserted

2 Press [f1] to bring the Actions menu onto the screen

3 Select `Insert Text`. Press [ENTER]

4 Pick out the Document you want to insert with the File cursor

5 Press [ENTER]

6 Check, and if necessary correct, the details in the selection menu

7 Press [ENTER]

Layouts

The actions described here are carried out while the document is being edited, unless otherwise stated.

Scope (Session 12)

- Position of margins
- Position and type of each Tab
- Justification of paragraphs
- Default character size and styling
- Default line spacing, line pitch and CR extra spacing
- Decimal Point character
- Standard zero character

Using a New Layout (Session 12)

1 Position the Text cursor where you want to start using the Layout

2 Press [f2] to bring the Layout menu onto the screen

3 Select `New layout`

4 Press [ENTER]

This puts you into the Layout Editor. You can now edit the Layout with the aid of the Layout Editor menus.

When you have finished using the Layout editor, press [EXIT] to return to the document. Delete the extra Carriage Return LocoScript gives you if you don't want this.

Using a Stock Layout (Session 12)

Menu method:

1 Position the Text cursor where you want to start using the Layout
2 Press [f2] to select the Layout menu
3 Select `New layout` and press [ENTER]
4 Press [f5] to select the Stock menu
5 Move the Menu cursor to the required Layout
6 Press [ENTER] and then [EXIT] to return to the document

Delete the extra Carriage Return LocoScript gives you if you don't want this.

Keystroke method:

1 Position the Text cursor anywhere on the line above the first line to be laid out using this layout
2 Press [⊞] and type `LT` followed by the number of the Layout
3 Press [ENTER]

Changing the Layout (Session 12)

1 Press [f2] to bring the Layout menu onto the screen
2 Move the Menu cursor to `Change layout`
3 Press [ENTER]

This puts you into the Layout Editor. You can now edit the Layout with the aid of the Layout Editor menus. When you have finished using the Layout editor, press [EXIT] to return to the document.

Changing a Stock Layout (Session 18)

- from the Pagination Screen

1 Press [f2] to bring the Layout menu onto the screen
2 Move the Menu cursor to `Change stock layouts` and press [ENTER]
3 Move the Menu cursor to the Stock Layout you want to change
4 Press [ENTER]

This puts you into the Layout Editor. You can now edit the Layout with the aid of the Layout Editor menus. When you have finished using the Layout editor, press [EXIT]

Setting Margins (Session 12)

The margins are set while the Layout is being edited.

1 Move the Ruler cursor to the new position for the margin
2 Press [f1] to bring the Margins menu onto the screen
3 Select `Set Left/Right Margin` as appropriate
4 Press [ENTER]

Setting Tabs (Session 12)

Tabs are set while the Layout is being edited.

1 Move the Ruler cursor to the position for the new Tab
2 Press [f3] to bring the Tabs menu onto the screen
3 Select the type of Tab you want
4 Press [ENTER]

Clearing Tabs (Session 12)

Tabs are cleared while the Layout is being edited.

Menu method:

Clearing one Tab:

1 Pick out the Tab with the Ruler cursor
2 Press [f3] to bring the Tabs menu onto the screen
3 Select `Clear Tab` and press [ENTER]

Clearing all Tabs:

1 Press [f3] to bring the Tabs menu onto the screen
2 Select `Clear All Tabs` and press [ENTER]

Keystroke method:

Clearing one tab:

1 Pick out the Tab with the Ruler cursor
2 Press [-]

Showing Rulers (Session 12)

– while editing a document

1 Press [f8] to bring the Options menu onto the screen
2 Set `Rulers`
3 Press [ENTER]

Page breaks and Line breaks

The actions described here control where LocoScript can break the text of a document between one line and the next and between one page and the next. Unless otherwise stated, these are carried out while the document is being edited.

Allowing a line break in the middle of a word (Session 16)

1 Position the Text cursor where you are willing for the word to break
2 Type the appropriate key sequence for the type of character you want to appear when the word is broken - as follows:

Hyphen	[-] followed by a hyphen
Space	[-] followed by a space

Preventing a line break at a space or a hyphen (Session 16)

1 Delete the existing character
2 Type the appropriate key sequence as follows:

Hyphen	[+] followed by a hyphen
Space	[-] followed by a space

Starting a new page (Session 16)

1 Position the Text cursor where you want the new page to start
2 Hold down [ALT] and press [RETURN]

Keeping lines together (Session 16)

Menu method:

1 Position the Text cursor on the first line of the group that you want to keep together
2 Press [/5] to bring the Page menu onto the screen
3 Move the Menu cursor to `?? lines below`
4 Type the total number of lines in the group
5 Press [ENTER]

Keystroke method:

1 Position the Text cursor on the first line of the group
2 Press [⊞] and type K, followed by the total number of lines in the group
3 Press [ENTER]

Setting the general rules for Page Breaks (Session 18)

- from the Pagination Screen

1 Press [/5] to bring the Page menu onto the screen
2 Select `Page break control` and press [ENTER]
3 Set the required Page Break rule
4 Press [ENTER] [EXIT] [ENTER]

Paper

Setting Document Paper Type (Session 20)

- from the Pagination Screen

1 Press [/5] to bring the Page menu onto the screen
2 Select `Paper type` and press [ENTER]
3 Set the type of paper - one of the standard Paper Types or the Special Paper Type
4 Set whether the paper is to be used Portrait or Landscape
5 Select `Show Paper Type` and press [ENTER]
6 Make any changes you need to the specification of the Paper Type so that Paper Type describes the paper that will actually be used
7 Press [ENTER] [EXIT] [ENTER]

Setting Printer Paper Type (Session 20)

Setting to match the Document Paper Type:

1 Select the document and tell LocoScript to print this
2 Select `Change to paper intended for document`
3 Press [ENTER]

LocoScript then sets up the Printer for the same paper as the document you have picked out for printing. The document is then printed.

Setting up for 'drafting' paper - from LocoScript's Printer Control State (see Printing):

1 Press [f3] to bring the Paper menu onto the screen
2 Set the type of paper - one of the standard Paper Types or the Special Paper Type
3 Set whether the paper is to be used Portrait or Landscape
4 Select `Show Paper Type` and press [ENTER]
5 Make any changes you need to the specification of the Paper Type so that Paper Type describes the paper that will actually be used
6 Press [ENTER] [↑] [ENTER]

Setting Page Layout (Session 18)

- from the Pagination Screen

1 Press [f5] to bring the Page menu onto the screen
2 Select `Page layout` and press [ENTER]
3 Move the Menu cursor to `Header/Footer zone` and type in the number of lines you want this to be; then press [ENTER]
4 If necessary, set the other zone in the same way
5 Set whether you want a Fixed or a Floating Footer zone
6 Press [ENTER] [EXIT] [ENTER]

Phrases

Loading a set of Phrases (Session 15)

- from the Disc Manager Screen

1 Pick out the Phrases file you want to load with the File cursor
2 Press [f1] to bring the Actions menu onto the screen
3 Select `Load phrases` and press [ENTER]
4 Check, and if necessary correct, the details in the Selection menu
5 Press [ENTER]

Setting up a new Phrase (Session 15)

- while editing a document

1 Move the Text cursor to the beginning of the phrase in your document
2 Press [COPY]
3 Move the Text cursor to the end of the phrase
4 Press [COPY]
5 Type the name for the Phrase (`A...Z`)

Inserting a Phrase (Session 15)

- while editing a document or setting up Pagination text

1 Position the Text cursor where the Phrase is to be inserted

2 Press [PASTE]

3 Type the name of the Phrase (A...Z)

Saving a set of Phrases (Session 15)

- from the Disc Manager Screen

1 Press [f1] to bring the Actions menu onto the screen

2 Select `Save Pphrases` and press [ENTER]

3 Pick out the group in which you want to store the Phrases with the File/Group cursor

4 Press [ENTER]

5 Check, and if necessary correct, the details in the Selection menu

6 Press [ENTER]

Inspecting Phrases (Session 15)

- from either the Disc Manager Screen or the Editor

1 Press [f1] to bring the Actions menu onto the screen

2 Select `Show phrases`

3 Press [ENTER]

A menu showing the first few words of each stored Phrase is then displayed. Press [CAN] when you have finished with this menu.

Positioning text

Centring a line of text (Session 9)

Menu method:

1 Position the Text cursor at the beginning of the line

2 Press [f2] to bring the Layout menu onto the screen and select `Centre`

3 Press [ENTER]

Keystroke method:

1 Position the Text cursor at the beginning of the line

2 Press [⊞] and type `CE`

Moving a line to the right (Session 9)

Menu method:

1 Position the Text cursor at the beginning of the line

2 Press [f2] to bring the Layout menu onto the screen and select `Right align`

3 Press [ENTER]

Keystroke method:

1 Position the Text cursor at the beginning of the line

2 Press [⊞] and type `RA`

Indenting a whole paragraph (Session 9)

1 Move the Text cursor to the beginning of the paragraph

2 Hold down [ALT] as you press [TAB]

Printing

Note: These instructions don't cover the various Alert messages that LocoScript will display prior to printing your document if, for example, your printer is not set up for the same type of paper as the document. If an Alert message appears, select one of the options offered in the message and press [ENTER].

Printing one copy (Session 4)

- from the Disc Manager Screen

1 Pick out the document you want to print one copy of with the File cursor

2 Press **P**

3 Check, and if necessary correct, the details in the Selection menu

4 Set `High/Draft quality` (if appropriate)

5 Press [ENTER]

Printing multiple copies (Session 4)

- from the Disc Manager Screen

1 Pick out with the File cursor the document you want to print multiple copies of

2 Press **P**

3 Check, and if necessary correct, the details of the document you have picked out

4 Set `High/Draft quality` (if appropriate)

5 Select `Number of copies`

6 Type the number of copies you require and press [ENTER]

Printing selected pages (Session 4)

- from the Disc Manager Screen

1 Pick out with the File cursor the document you want to print pages from

2 Press **P**

3 Check, and if necessary correct, the details of the document you have picked out

4 Set `High/Draft quality` (if appropriate)

5 Set the number of copies as above

6 Move Menu cursor to `Print part of document`

7 Press [ENTER]

8 Check the Menu cursor is on `From page` and type the number of the first page to be printed; then press [ENTER]

9 Move the Menu cursor `To page` and type the number of the last page to be printed; then press [ENTER]

10 Press [ENTER] again

Entering Printer Control State (Session 4)

Enter LocoScript's Printer Control State by pressing [PTR]. Leave it again by pressing [EXIT]

Note: Loading paper into the built-in printer automatically puts LocoScript into Printer Control State.

Reprinting (Session 4)

- from Printer Control State

1 Press [f7] to bring the Document menu onto the screen
2 Select required Reprint option
3 Press [ENTER] [EXIT] [ENTER]

Setting Left Offset (Session 13)

- from Printer Control State

1 Press [f6] to bring the Left Offset menu onto the screen
2 Increase the Left Offset by moving the Menu cursor to `Increase offset` and pressing [ENTER] as many times as necessary
3 Decrease the Left Offset by moving the Menu cursor to `Decrease Offset` and pressing [+] as many times as necessary
4 Press [EXIT] [ENTER]

Suspending/Resuming printing (Session 4)

- from Printer Control State

1 Press [f1] to bring the Actions menu onto the screen
2 Select `Suspend/Resume printing`
3 Press [ENTER]

Print to end of page (Session 4)

– from Printer Control State

1 Press [f1] to select the Actions menu
2 Select `Print to end of page`
3 Press [ENTER]

Search and Replace

Find (Session 14)

- while editing a document

1 Check that the Text cursor is higher up the document than the word or phrase you want to find
2 Press [FIND]
3 Make the Find text match the word or phrase you want LocoScript to search for
4 Set the Search options you require
5 Press [ENTER]

Exchange (Session 14)

- while editing the document

1 Check that the Text cursor is higher up the document than the first instance of the word or phrase that you want to replace
2 Press [EXCH]
3 Make the Find text match the word or phrase that you want to replace
4 Make the Exchange text match the word or phrase that you want to insert instead
5 Set the Search and Replace options
6 Either select `Manual Exchange` and press [ENTER] or select `Automatic exchange` and press [PARA], [PAGE] or [DOC] depending on how much you want to change

If you select Manual Exchange, press [+] to confirm the exchange, [-] to carry on without exchanging or [CAN] to abandon the exchange each time LocoScript picks out an example of the Find text.

Text preparation

The actions described here are carried out while a document is being edited.

Styling text (Session 10)

Note: The methods described here style all the following text until cancelled by another styling instruction.

Menu method:

1 Position the Text cursor where the styling is to changed
2 Press [f3] to bring the Style menu onto the screen
3 Set and Clear the options in this menu as appropriate
4 Press [ENTER]

Keystroke method:

1 Position the Text cursor where the styling is to be changed
2 Type the appropriate sequence of keystrokes as follows:

	Set	Clear
Bold	[+]B	[-]B
Double Strike	[+]D	[-]D
Italic	[+]I	[-]I
Reverse	[+]RV	[-]RV
Underline	[+]UL	[-]UL
Word underline	[+]W	[-]UL
Superscript	[+]SR	[-]SR
Subscript	[+]SB	[-]SB

Displaying word-processing codes (Session 10)

1 Press [f8] to bring the Options menu onto the screen
2 Set `Codes`
3 Press [ENTER]

Setting character size (Session 11)

Note: The methods described here set the size of characters used for all the following text until the character size is reset either by another sizing instruction or by a change of Layout.

Menu method:

1 Position the Text cursor where the character size is to be changed
2 Press [f4] to bring the Size menu onto the screen
3 Set the required Character Pitch
4 Set the required Character width
5 Press [ENTER]

Keystroke method:

1 Position the Text cursor where the character size is to be changed
2 Press [+] and type `P`
3 Type the combination of numbers and letters that define the required pitch and width (for example, `15D` or `PS`)
4 Press [ENTER]

Note: The Character Pitch options are: 10, 12, 15, 17 and PS

Setting line spacing (Session 11)

Note: The methods described here set the line spacing used for all the following text until the line spacing is reset either by another spacing instruction or by a change of Layout.

Menu method:

1 Position the Text cursor where the line spacing is to be changed
2 Press [f4] to bring the Size menu onto the screen
3 Set the required Line Spacing
4 Set the required CR Extra Spacing
5 Set the required Line Pitch
6 Press [ENTER]

Keystroke method:

1 Position the Text cursor where the line spacing is to be changed
2 Type the appropriate sequence of keys as follows:
   Line Spacing: [+]LS followed by the number of lines
   CR Extra Spacing: [+]CR followed by the number of lines
   Line Pitch: [+]LP followed the required Line Pitch

Finish each code by pressing [ENTER]

Note:

The Line Spacing options are:
0, 1/2, 1, 1 1/2, 2, 2 1/2, 3
The CR Extra Spacing options are:
0, 1/2, 1, 1 1/2
The Line Pitch options are: 5, 6, 7 1/2, 8

Setting/Clearing Justification (Session 9)

Menu method:

1 Position the Text cursor where the justification is to be changed
2 Press [f2] to bring the Layout menu onto the screen
3 Move the Menu cursor to `Set/Clear justification`
4 Press [ENTER]

Keystroke method:

1 Position Text cursor where the justification is to be changed
2 Set Justification by pressing [+] and typing J; Clear Justification by pressing [-] and typing J

Moving round the document (Session 5)

To move to a particular page:

1 Press [f5] to bring the Page menu onto the screen
2 With the Menu cursor on `Find page ????`, type the number of the page you require
3 Press [ENTER]

To move to the start of the next word, paragraph, page etc:

- Press the appropriate Textual Movement Key ([WORD], [PARA], [PAGE] etc.)

To move to the start of the previous word, paragraph, page etc:

- Hold down [ALT] as you press the appropriate Textual Movement Key

Appendix V

Troubleshooting

This appendix looks at what to do and what might have gone wrong when your system doesn't work in the way you expect. If you can't find the solution to your problem here, look in the equivalent section in Part I of this User Guide. If you still can't find out what went wrong, consult your dealer.

Note: Only the commonest error messages are explained here. A full list of messages is given in the LocoScript 2 Reference Manual.

I: Trouble with the machine as a whole

• The screen goes blank or your machine seems 'dead'

Remove the disc(s) from the drive(s). Then try resetting your machine by holding down [SHIFT] and [EXTRA] and pressing [EXIT]. If this doesn't bring your PCW back to life, switch off, wait a few seconds and then switch on again.

Reload LocoScript 2 and then repeat what you were doing when the problem happened. The chances are that it won't happen again but if it does, consult your dealer or write, giving full details, to Amstrad Customer Services (see the Introduction to this User Guide).

II: Trouble using the disc drive

If you still can't insert the disc, consult your dealer – whatever you do, don't force the disc into the drive. You will only succeed in damaging the drive.

• You insert a disc in the drive and a message appears telling you that the disc is unformatted

The disc either:

- is completely blank; or
- isn't suitable for your computer

Either insert a different disc or use the Format disc option in the Disc menu to mark the disc out correctly.

Note: Check that the disc is either completely unused or doesn't have anything you want stored on it before you format it. Formatting a disc destroys any data that is currently stored on it.

III: Trouble during Start-up or while resetting your PCW

• The PCW just bleeps or the screen flashes

The disc in Drive A either:

- doesn't have the LocoScript software on it; or
- has been damaged; or
- isn't suitable for your computer

Check that you inserted the right disc and then reset your machine. If it bleeps again, try using the disc on which LocoScript 2 was supplied to you. If this fails too, consult your dealer.

• Software is loaded from the disc but you don't see the LocoScript 2 Copyright screen or the Disc Manager Screen

You have inserted a disc with the wrong software on it. Try using a different Start-of-day disc.

IV: Trouble while copying or formatting a disc

• A message appears reporting a 'Disc Error'

Your disc may have been damaged.

Select the `Retry` option and press [ENTER]: this may well clear the problem. However, if the message simply reappears, select `Cancel operation` and press [ENTER]. This returns you to the Disc Manager Screen.

Release the disc(s) from the drive, then try copying/formatting the disc again. If this also fails, rescue what files you can from the damaged disc by using the File menu to copy these one by one to a different disc. Then abandon using the disc.

• A message appears saying that the disc is 'Write-protected'

You are trying to copy to or format a disc which has either or both of the Write-protect holes open. Either:

- close the Write-protect hole and select `Disc write enabled: continue`; or
- select `Cancel operation` – if you realise that if you continue, you will destroy information you didn't mean to lose

V: Trouble when you select a document for editing or create a new document

• A message appears telling you that what you have picked out is 'Not a LocoScript 2 document'

You are trying to edit a file that is not a LocoScript 2 document. It could, for example, be one of your Phrases files or an ASCII version you have created of one of your LocoScript 2 documents.

The only documents you can edit using LocoScript 2 are LocoScript 2 documents or LocoScript '1' documents. LocoScript '1' documents are automatically converted as the first step in the process. If you want to edit information that you have prepared under a different computer system, you must create a new document and then 'insert' the file containing this information into your new document – which you can then edit, save and print.

• A message appears telling you that the 'Disc is write-protected'

The disc holding the document you selected to edit is write-protected – so LocoScript won't be able to save the new version you create back on the same disc.

You can now release the disc, close its write-protect holes, return it to the drive and select `Disc write enabled: continue`. But if you have only opened the document for editing so that you can look at it or copy a section of it into a Block, you might prefer to simply select `Send result to Drive M:`.

• A message appears telling you that the 'Directory is full'

You have so many files on the disc that you have filled up the space reserved for filenames. You can't store any more documents on this disc – but you can edit the documents on the disc without any problems.

VI: Trouble while editing

• Your PCW bleeps as you press a key

The key you pressed isn't one of the ones LocoScript was expecting – so it bleeped to tell you that it couldn't do anything with your keystroke.

The likely reasons for this are:

- you have pressed [RETURN] when you should have pressed [ENTER] or vice versa (you tell LocoScript to go ahead in menus by pressing [ENTER] – not [RETURN])
- you are forgetting that LocoScript is currently in Printer Control State – for example, because you have just loaded a piece of paper into the printer
- you are forgetting that you still have a menu or an Alert message on the screen

Think again about the key you should be pressing.

• Typing produces all the wrong characters

If these characters are Greek letters, Cyrillic letters or Symbols, then your keyboard is currently working in one of its alternative modes. Hold down [ALT] and press [f1] to make your keyboard go back to typing the standard range of 'Roman' script characters.

If what you are getting is Capital letters rather than small letters, you are currently working with Caps Lock set. Hold down [ALT] and press [ENTER] to clear this.

• Using the Textual Movement Keys just produces numbers

You are currently working with Num Lock set. Hold down [ALT] and press [RELAY] to clear this.

• LocoScript appears to be working but whatever you type doesn't have any effect

Your keyboard may be faulty. Unplug the keyboard from the Monitor unit and then plug it in again. If LocoScript doesn't respond after this, reload LocoScript. If it still fails to respond, consult your dealer.

• A message appears on the screen telling you that the 'Disc is full'

There is either no longer room on the disc to store your new version of the document or no longer room on Drive M for the temporary files LocoScript has created while editing your document.

Look at the message to see which Drive has run out of space; then select `Run Disc Manager`. You can then move documents off the affected disc onto another

disc or delete them – until you make enough room. When you believe you have done enough, press [EXIT]. If you haven't made enough room, the message will appear again, giving you another chance to sort the problem out – but if all is well, you can just continue editing.

• A message appears telling you that there is a 'Data error' or a 'Missing address mark'

The document you are editing has been damaged.

The option to take when this message first appears is `Retry` – because this may well make the problem go away.

If the message just returns, which option you take depends on how much editing you have done:

- If you have made a lot of changes up to the point you are currently working, select the `Ignore` option. You will then see another message warning you that you are working with a damaged document. Save this document and recover the previous version from Limbo.
- If you haven't made any changes up to this point, select `Cancel operation`. This returns you to the Disc Manager Screen – as if you hadn't started editing the document.

If you don't have a back-up copy of this document on another disc, you should now try using the `Copy file` option in the File menu to copy the original document to another disc. However, this may fail.

Re-edit the original document and the new version (if you saved this) and copy undamaged sections of these documents into Blocks. Paste these sections into a new document. Use this technique to 'rescue' as much of the damaged document as you can.

• A message appears on the screen telling you that the 'Editor data buffer is full'

The page you are working on is either excessively large or excessively complicated. Simplify it, for example by reducing the number of tabs you are using.

VII: Trouble when trying to print a document

• There is no 'Save and Print' option in the Exit menu

Your selected printer is not currently connected to your PCW – or the printer is already busy. Save the document, press [PTR] and then use the Document menu to see if the printer is printing anything.

If this menu gives details of a document, the LocoScript is in the middle of printing this document: perhaps you haven't fed in enough paper to finish the last document you asked LocoScript to print. If the menu doesn't give details of a document, switch your PCW off and check that the printer is connected properly. Then reload LocoScript 2.

Look at the Information lines on the Disc Manager Screen. If these show the `P=Print Document` and `D=Direct Printing` options, then all is well and your printer is now correctly attached. If not, your printer may well be faulty – so consult your dealer.

• You press P or D and you see a message telling you that the printer is absent

Your selected printer is not currently connected to your PCW. Switch your PCW off and check that the printer is connected properly. Then reload LocoScript 2.

Look at the Information lines on the Disc Manager Screen. If these show the `P=Print Document` and `D=Direct Printing` options, then all is well and your printer is now correctly attached. If not, your printer may well be faulty – consult your dealer.

• The Printer Actions menu just has the one entry – Reset Printer

Your printer has been left in a strange state. Press [ENTER], so that LocoScript resets the printer.

• A message appears telling you that what you have picked out is 'Not a LocoScript 2 document'

You are trying to print a file that is not a LocoScript 2 document. It could, for example, be one of your Phrases files or an ASCII version you have created of one of your LocoScript 2 documents,.

The only documents you can print using LocoScript 2 are LocoScript 2 documents. If you want to print information that you have prepared under a different computer system, you must create a new document and then 'insert' the file containing this information into your new document – which you can then edit, save and print.

• You pick out a document for printing and you see a message telling you that you have picked out a LocoScript '1' document

The document you picked out was prepared using the earlier version of LocoScript. Before you can print this, you must edit it. Then LocoScript 2 can carry out the necessary conversion to produce a document that can be printed using LocoScript 2.

• The printer doesn't start to print

First check that there is paper in the printer. If there isn't, load a sheet of paper and press [EXIT]: your document will probably print now.

If this doesn't solve the problem, press [PTR] to put LocoScript into Printer Control State and see whether the printer is waiting for paper or otherwise currently suspended. Use the [f1] Actions menu to 'resume printing'. Press [EXIT] to leave Printer Control State.

If your document still doesn't print, press [PTR] again. This time use the [f5] Printer menu to check which printer LocoScript is expecting to print on and, if necessary, change it. If it was set up for the printer you expected, check that this printer is properly plugged into your PCW. Press [EXIT] again.

If the document still doesn't print, consult your dealer.

• The printer appears to work but nothing is printed

Check that you have a ribbon in the printer.

• The printer suddenly stops printing

There are two possible reasons for this – that the printer is out of paper or it has reached the end of the ribbon. Press [PTR] to put LocoScript into Printer Control State and see if the current printer state is `No Paper` or `Ribbon out`.

– If the current printer state is `No paper`, then the printer has detected the end of the paper you are feeding into the printer.

Don't load fresh paper yet. First use the [f1] Actions menu to 'print to end of page'. When printing stops again, load fresh paper and then use the [f1] Actions menu to 'Resume printing'.

This problem typically only happens when you are using continuous stationery.

– If the current printer state is Ribbon out, then you have reached the end of the current ribbon and must replace it with a nw one. Meanwhile, your system has been 'frozen' so that you don't lose any of your text. Replace the ribbon and then press [EXIT]. Your text should then be printed.

• The printer prints rubbish

You haven't set up LocoScript correctly for the printer you are using. Press [PTR] so that the printer stops printing as soon as possible. (Unfortunately, if the printer keeps a large store of characters to print, this may take a while!)

Use the Printer menus to set up LocoScript correctly (see Session 23) and to restart printing the document (see Session 4).

• The paper jams in the printer

Press [PTR] so that the printer stops printing as soon as possible. (Unfortunately, if the printer keeps a large store of characters to print, this may take a while!)

Clear out the damaged paper, reload with fresh paper and then use the Printer menus to restart printing the document (see Session 4).

• The text is poorly positioned on the page

Press [PTR] to put LocoScript into its Printer Control State and then use the [/6] Left Offset menu to adjust the start position of each line of text. Then use the Document menu to restart printing the document (see Session 4).

Part III

Using CP/M, BASIC and LOGO

Chapter 1

Introduction to CP/M on the PCW9512

Normally, you use your PCW9512 as a powerful word processing system – by using the LocoScript 2 program. The PCW9512 can also be used as a general purpose microcomputer, by using CP/M Plus instead of LocoScript. CP/M Plus is version 3 of the 'Control Program for Microcomputers'.

CP/M makes each computer on which it is used behave in the same way and the PCW9512 is by no means the only computer to run CP/M. As a result, the PCW9512 user has many thousands of software packages from which to choose – everything from games to accountants' spreadsheets.

If you want to write your own software, then you will also find included two easy to use programming systems: Locomotive Software's Mallard BASIC interpreter and Dr. Logo, Digital Research's implementation of the Logo programming language. Mallard BASIC will accept programs written for the industry standard Microsoft BASIC interpreter with little or no modification.

We should point out that none of the menus and other user friendly features of the PCW9512 when it is working as a word processor are available when the PCW9512 is running CP/M. These features are unique to LocoScript. What sort of help you get while you are using CP/M programs will depend on the software you run.

We should also point out that the actions that some of the keys have when you run CP/M are different from those they had while you were using LocoScript. They change again when you run Dr. Logo. Details of the characters and actions that the keyboard is set up to produce when you use CP/M are given in Appendix I, while details of extra changes for Dr. Logo are given in the special section on this programming language.

1.1 What CP/M is

CP/M is an operating system which means its job is to run programs and help you organise your data.

To do this, it has some special programs called the CP/M commands. These come in two groups, built-in commands and Transient Utility Programs – or Utilities for short. The built-in commands are automatically read into the PCW9512's memory every time the CP/M operating system is loaded and they are always available to you. The utilities are also stored on the Start-up disc, but they have to be loaded into the PCW9512's memory each time they are used.

Both programs and data are stored in Files, and to run a program what you have to tell CP/M is the name of the file holding the program you want to run. Often you also have to give CP/M the name of the file holding the data the program is going to manipulate for you.

You give CP/M all this information by typing in what are known as Command Lines. These always start with the name of the file holding the program you want to run – which could be one of the CP/M built-in commands or a utility.

CP/M identifies files by a two-part name. The first part is called the Filename and the second part the Filetype.

The filename can essentially be any combination of up to eight characters, though you shouldn't use certain special characters:

```
< > = ! | * ? & / [ ] ( ) . , : ; \ + -
```

Often just the letters of the alphabet A...Z and the digits 0...9 are used. (CP/M doesn't distinguish between capital letters and small letters in file names and so there is no difference between using A...Z and using a...z.)

The filename will usually have been chosen to suggest what the file contains but this doesn't have to be so.

The filetype is up to three characters long, and again the characters recommended are A...Z and 0...9. But unlike the filename, the filetype can be fixed by the sort of operations that are to be done using the file.

When typing in your command line, you will always have to give the filename and often you will have to give the filetype as well. If so, the way to type this is the filename, followed immediately by a dot, followed immediately by the filetype. For example, if the file you want to specify has the filename `MYFILE` and the filetype `TXT`, you would type `MYFILE.TXT` in your command line.

The other piece of information you may have to give CP/M is a letter that tells it which disc holds the file you want.

CP/M can cope with up to 16 drives, which it calls A, B,...P. So, for example, if MYFILE.TXT is on Drive B, you might have to type `B:MYFILE.TXT`. The `B:` tells CP/M to look on the disc in Drive B.

At any one time, CP/M calls one of these drives its Default Drive and you don't need to give the drive letter with files on the disc in that drive. This is usually Drive A but you can change it as we shall describe later.

1.2 Getting started

Before you can run any application program under CP/M Plus on the PCW9512, the computer has to read CP/M off the CP/M Start-up disc into its memory. The PCW9512 loses the information it needs to run CP/M programs each time it is switched off or reset.

As you will find yourself changing the disc in the drive quite often while you run CP/M, you should remind yourself of the rules about handling discs given in Chapter 2 of Part I of this User Guide. In particular, remember that you should **never** remove a disc while the light on the disc drive is on or flashing on and off: that could damage your disc, let alone the data on it.

The steps involved in loading CP/M into the PCW9512 (the process often referred to as 'booting CP/M') are as follows:

Start by checking that there is no disc in the drive: then turn the machine on.

Select your CP/M Start-up disc, hold the disc by its labelled end with Side 1 uppermost and insert it into Drive A (your floppy disc drive – or the lefthand floppy disc drive if a second disc drive has been fitted to your machine).

Press the space bar. If all is well, you should see a pattern of white and black horizontal lines build up on the screen. The PCW then displays a message like:

```
CP/M Plus  Amstrad plc
v 2.0, 61K TPA, 1 disc drive, 368K drive M:
A>
```

and carries out a few special extra commands. Finally it stops, with A> on the last line of the display followed by a bright oblong.

The A> that precedes the oblong is called the System Prompt. This tells you that CP/M is ready to receive a command. It also tells you that the current Default Drive is Drive A. If the default drive is ever changed, for example to Drive B, the system prompt will also change – in this case to B>

The oblong is called the Cursor and its position marks where the next character you type in will appear on the screen.

If you get a completely different message – in particular, if you appear to go into the LocoScript system – wait for the light on the disc drive to stop flashing and then release the disc. Check that you inserted the disc you intended and that you inserted it the right way up. Put the disc in the drive again, hold down [SHIFT] and [EXTRA] and then press [EXIT].

If the disc is damaged in any way or there is no CP/M operating system on the disc, the screen will flash as the PCW9512 attempts to read it. After a few unsuccessful attempts, the computer will bleep before switching the disc drive motor off. The screen is left bright all over.

The other thing to note about this loading process is that the printer is now set up to handle single sheets of A4. If this isn't the sort of paper you want to use, turn to the section on 'Operating the built-in printer' (Section 2.12) **before** you use the printer.

1.3 Essential preparation

The next thing to do is to make a copy of the supplied CP/M disc. You need this copy to give yourself a CP/M Start-up disc to use every day. The supplied disc shouldn't be used as your Start-up disc because then you would risk damaging the disc and losing all the valuable software on it. Instead, it should be stored safely away, to use only to make another copy if your 'Working' copy gets damaged.

Copying a disc means copying all the data from one disc onto another in such a way that the second disc becomes identical to the first. The whole process should take about five minutes.

When you are using CP/M, the program that does this is called DISCKIT. This program is easy to use because all you have to do is follow the instructions on the screen. If you prefer, you can use LocoScript to copy CP/M discs.

Still keeping the 'Master' CP/M disc in the drive, type:

```
DISCKIT
```

(You will see the characters appear on the screen after the A> prompt.) Then press the [RETURN] key.

Up on the screen will come a series of messages. The first message tells you to remove your disc: press [ENTER] (say) when you have done this. The next message offers you the choice of Copy, Format or Verify (or Exit from DISCKIT) and telling you which key to press to select each option. In this case, you want Copy, so press the [f5] key.

Assuming you are NOT operating a two-drive system, the next message that appears asks you to '...put the disc you wish to READ into the drive, then press Y'. If this is the message you see on the screen, then simply insert the disc you want to copy from (in this case the Master CP/M disc), and type Y.

(If you ARE operating a two-drive system, you will be asked which drive you want to read from (press [f3] for Drive A – the disc drive on the left); you will then be asked which drive you want to write to (press [f1] for Drive B – the disc drive on the right). Only after that will you be asked to insert the disc to READ and press a key).

After you have typed Y, copying will take place. You will see the system counting through the numbers 0...159 both as it reads the information on the Master disc and as it writes the copy on the new disc. You should note that copying can take place in a number of parts – each part copying a section of the information on the disc to READ onto the disc to WRITE.

Assuming that you are using a system with one disc drive, you will shortly see the message:

```
Insert disc to WRITE into drive A:
Press any key to continue
```

(This message may not appear if you are copying on a two-drive system.)

Release the system disc from the drive and insert the new blank disc. Press [ENTER] and DISCKIT will start to write the information it has copied from the Master disc onto the new disc. If the new disc hasn't already been prepared as a 720k disc, you will see a message telling you that DISCKIT is 'Going to format the disc in drive A: while copying'.

After a short while, up will come the message:

```
Insert disc to READ into drive A:
Press any key to continue
```

and you must again re-insert the original system disc you are copying from so that the second part of the copy can go ahead. After you have again changed discs and pressed a key (as instructed on the screen) you will eventually see the message:

```
Copy completed
Remove the disc from the drive
```

If you accidentally mix up the disc you are reading from (the Read disc) and the disc you are writing to (the Write disc), DISCKIT will spot this and display an appropriate message.

Any error messages that appear should also be self explanatory, but if you feel in need of extra help, refer to Chapter 5 where full details of the DISCKIT utility are given.

Once the process of copying disc has been completed, release the new disc from the drive and write 'CP/M Start-up disc' on its label. Then press [ENTER] to return to DISCKIT's main menu.

Finally press [EXIT] to leave DISCKIT.

Once you have made your copy, store your CP/M Master disc safely somewhere where it will be away from any magnets – including the ones in your television, your audio equipment and your PCW9512 – and where it won't get very hot, very cold, damp or dirty.

1.4 Using CP/M

In principle, you now know enough about CP/M to run any well documented CP/M program.

Unfortunately, this will not always be the case. We give advice on how to go about choosing the software to buy in Chapter 3 but, even so, you are advised to spend some more time learning about CP/M itself. Then, you'll be able to get the CP/M application software you buy working that much easier.

The rest of this introduction takes you through some simple uses of CP/M. Although you can just read it, we suggest that you work through the instructions using the PCW9512 as it will get you used to how CP/M works and how it differs from LocoScript.

1.4.1 Using the utilities

The PCW9512 is supplied with more than 30 utilities. Some of these utilities extend a similarly named built-in command to give that command extra features.

As we described earlier, you give instructions to CP/M by typing in what are known as Command Lines.

These must be absolutely correct if they are to have the right effect but it doesn't matter if you make a mistake while typing in the line: just use the [←DEL] key to rub out what you have typed back to where you made the mistake and then type it in again from that point.

At the end of each command line, press the [RETURN] key: this sends the instructions to CP/M. We will remind you to do this throughout this introduction by putting [RETURN] at the end of each command line we suggest you type in. But in line with almost every reference book on CP/M, these are omitted in the more advanced parts of this User Guide.

Command lines will only be obeyed if they are typed when CP/M is ready to receive a command, which it shows by putting a system prompt (for example, A>) on the screen.

The rest of this section is designed to help you learn what instructions to give CP/M.

What's on your discs

The first thing you will want to know about any disc you put in the drive is what files are on the disc.

The names of all the files on a disc are held in a Directory and you look at the contents of the directory with the aid of DIR, one of the built-in CP/M commands.

Put your CP/M Start-up disc back in the drive. To see the names of the files on this disc type in this instruction after the A>:

DIR [RETURN]

CP/M never distinguishes between lower case and upper case letters so you can use whichever you prefer. You don't even have to be consistent.

Up on your monitor screen will come something like:

```
A>dir
A: BASIC   COM : HEXCOM   COM : RMAC     COM : J21ACPM3 EMS : MAIL232  COM
A: CPMKEYS COM : INITDIR  COM : SAVE     COM : LOGO     SUB : 8000COPY COM
A: DAISY   COM : LANGUAGE COM : SET      COM : PROFILE  SUB : HELP     HLP
A: DATE    COM : LIB      COM : SET24X80 COM : RPED     SUB : ASSIGN   SYS
A: DEVICE  COM : LINK     COM : SETDEF   COM : DEMO     BAS : GSX      SYS
A: DIR     COM : LOGO     COM : SETKEYS  COM : EX1      BAS : DDFXMR8  PRL
A: DISCKIT COM : MAC      COM : SETLST   COM : EX2      BAS : DDFXLR8  PRL
A: DUMP    COM : MATRIX   COM : SETSIO   COM : EX3      BAS : DDHP7470 PRL
A: ED      COM : PALETTE  COM : SHOW     COM : EXGSX    BAS : DDSCREEN PRL
A: ERASE   COM : PAPER    COM : SID      COM : EXJTSAM  BAS : HIST     UTL
A: GENCOM  COM : PATCH    COM : SUBMIT   COM : EXJTSAM2 BAS : TRACE    UTL
A: GENGRAF COM : PIP      COM : TIMEOUT  COM : EXJTSAMI BAS : KEYS     DRL
A: GET     COM : PUT      COM : TYPE     COM : GSXPREP  BAS : KEYS     WP
A: HELP    COM : RENAME   COM : XREF     COM : RPED     BAS
A>
```

The leftmost column is full of 'A:'s because the disc is in the drive CP/M has named Drive A.

The rest of the list is made up of alternate columns of filenames and filetypes, starting with filenames. Each filename goes with the filetype immediately to its right – so J3xCPM3 and EMS is one file, BASIC and COM another, and so on.

Some of these files contain CP/M programs, some hold BASIC programs and some are data files. You can tell which is which from their filetypes.

For example, you will see that most of the files listed on the screen have the filetype COM. This means that the file holds a program that CP/M can run. Other special filetypes in this list are: BAS – indicating a file containing a BASIC program; SUB – indicating a file that contains the instructions to run a sequence of CP/M programs; and EMS. The EMS file is the one that contains CP/M.

Much of the time, you will be interested, not so much in what files are on a disc, but in whether the file or files you want are on the disc. The DIR command can also do this for you.

Suppose you want to see if you have a file with the filename RPED and the filetype BAS on this disc. The command line that does this is:

```
DIR RPED.BAS [RETURN]
```

Notice that we have quoted the name of the file by putting its filename and then its filetype, separated by just a dot.

The response on the screen will be:

```
A: RPED   BAS
```

If the file hadn't been on the disc, you would have seen the message:

```
No File
```

If you had known that the filename of the file you wanted was RPED but you couldn't remember its filetype, you could have used the DIR command to list out the whole directory as before. A better solution would have been to give DIR a template that fits the name you are looking for and instruct it to search through the directory for all the files that match this template.

Templates are constructed using the Wildcards * and ? – an asterisk represents any number of characters but a question mark only represents a single character.

The template for all the files with the filename RPED is RPED.* and so the command line you would type in is:

```
DIR RPED.* RETURN
```

What will appear on the screen is:

```
A: RPED      BAS : RPED      SUB
```

which tells you that DIR has found two files matching the template, RPED.BAS and RPED.SUB.

You would use a similar template if what you wanted listed out was all the program files on the disc. This time we would use an asterisk instead of any filename and type:

```
DIR *.COM RETURN
```

You would also use an asterisk in the template if you knew just the first few characters of either the filename or the filetype or if you wanted to list all the files with the same few characters at the start of their filenames.

Say, for example, that you wanted DIR to list out all the files on the disc that have filenames starting with R, regardless of their filetype. The command line that does this is:

```
DIR R*.* RETURN
```

Notice that you have to use two asterisks: one for the filename and one for the filetype.

So far, we have just described how to use the asterisk wildcard. You would use the question mark wildcard if, for example, the files you wanted listed out all had filenames starting with PR but no more than five characters.

Suppose you want all these files whatever their filetype. The command line you would need is:

```
DIR PR???.* RETURN
```

We will tell shortly of some other uses of wildcards and how these will often save you a lot of typing.

The 'Memory Disc'

A special feature of CP/M on the PCW9512 is that you can use part of the PCW9512's memory as a disc – the Memory Disc. As far as CP/M is concerned, the Memory Disc is just like any other disc: it just happens to be permanently in the drive it knows as Drive M.

Operations involving the Memory Disc are very fast. However, you will lose everything you store there every time the machine is switched off or reset.

You can find out about the disc in another drive by making that drive the default drive. The command line that changes the default drive to Drive M is:

`M:` RETURN

CP/M will respond by changing the system prompt to `M>`

You can now find out what files are stored in the Memory Disc by typing:

`DIR` RETURN

The files you see listed are CP/M utilities that have been copied to Drive M as part of the Start-up process to make them readily available for use.

Go back to Drive A by typing:

`A:` RETURN

In fact, you could have found out what was in the Memory Disc without changing the default drive. The command line you would use is:

`DIR M:` RETURN

Alternatively, you could have checked if a particular file – say, FILE.TYP – was stored in the Memory Disc by typing:

`DIR M:FILE.TYP` RETURN

The `M:` that we have been using in these command lines is the final element in what is known as a file's File Specification, which indicates precisely which file you want by its location as well as its filename and filetype.

We could have put an `A:` in front of all the filenames we have given so far but the whole point of CP/M nominating a drive as the default drive is to save you the effort of giving the location when the file is on the default drive.

Later, when you use CP/M for real, you will probably store copies of other CP/M utilities you want to use on the Memory Disc. Then you won't have to change the disc in the drive merely because there is no copy of the utility you want on the same disc as the program you are running. We will tell you how to set up these copies in the next section.

Copying files

The CP/M utility that makes copies of files is called PIP.

The information you give PIP is the name of the file you want copied (the Source) and the name of the file you want the copy stored as (the Destination).

PIP will proceed to make the copy, provided that there is enough room on the disc for the new file.

To illustrate how the PIP utility works, we will copy the file called PROFILE.SUB and store the copy as the file TEMP on the same disc as the Source file. The command line to type in is:

```
PIP TEMP=PROFILE.SUB [RETURN]
```

Notice that you give PIP the details of the Destination file, before you give it details of the Source file.

Test that this new file now exists by typing:

```
DIR TEMP [RETURN]
```

You can also use PIP to copy between drives. To demonstrate this, we will once again make a copy of PROFILE.SUB but this time we will store the new file, TEMP, on the Memory Disc, which you will remember is Drive M.

The command line to do this is:

```
PIP M:TEMP=PROFILE.SUB [RETURN]
```

Now you have that copy on the Memory Disc, you can make another copy of the same file, but this time using the copy on the Memory Disc as the Source. The command line to type in is:

```
PIP TEMP2=M:TEMP [RETURN]
```

The above examples have all just copied one file. You can also use PIP to copy a number of files at once. However, you must want to copy all these files to the same disc and to store them there under their present filenames and filetypes.

You instruct PIP to copy the files by giving it a template that picks out just the files you want – in exactly the same way as you earlier used a template with the DIR command.

For example, you could in theory (but don't try just yet) make copies of all the utilities on the Start-up disc on the Memory Disc with the command line:

```
PIP M:=*.COM [RETURN]
```

Often there won't be a template that fits all the files you want to copy and no others. When this happens, you have to type a number of PIP commands. This can be fairly laborious particularly as the PIP command is stored on disc and has to be loaded into memory each time before it is used. Fortunately, there is a neat way of making a sequence of copies that doesn't involve loading PIP into memory specially for each copy. This is explained in Section 2.3.

Organising your discs

As well as letting you copy files, CP/M helps you to rename them or erase them from the disc.

All these operations are often referred to as Disc Housekeeping. As you use CP/M more, you will find you need these quite often.

The CP/M command to use to rename files is called RENAME – often abbreviated to REN. This command works purely on the directory of a disc, substituting the new filename and filetype for the old ones. The data itself is not changed.

You can change the name of a file as many times as you want. All you have to give RENAME is first the new name and then the old.

We shall illustrate this by changing the name of the file you just created, TEMP2, to TEMP.2. The command line that does this is:

```
REN TEMP.2=TEMP2 [RETURN]
```

In this case, the command alters the directory on the default disc. To rename a file on a disc in a different drive, you just need to add the drive letter – which obviously should be the same for both the new name and the old.

To demonstrate this, we shall change the name of the file called TEMP on the Memory Disc to FILE.NEW. The command line to type in is:

```
REN M:FILE.NEW=M:TEMP [RETURN]
```

So far, we have only described changing the name of one file. Templates like the ones you set up for use with the DIR and PIP commands can also be used with RENAME. However, the way you use wildcards in the new file specification must be identical to the way you use them in the old.

For example, to change the names of the two files, TEMP and TEMP.2, on the default drive to NEW and NEW.2, the command line to type in is:

```
REN NEW.*=TEMP.* [RETURN]
```

A command line like:

```
REN NEW.*=TE*.* [RETURN]
```

would fail.

You erase any files you no longer need with the ERASE command – often abbreviated to ERA.

To show how to use the ERASE command, we shall erase the file on the Memory Disc you have just renamed FILE.NEW. The command line that does this is:

```
ERA M:FILE.NEW [RETURN]
```

Once again, the location part of the file specification has been included because the file is not on the default drive.

The ERASE command also allows you to set up a template with wildcards and so use just one command line to erase a number of files.

This should be used with care. There is no limbo for files under CP/M – that was a special feature of LocoScript – and so files once erased cannot be restored.

However, there is an extra feature of the ERASE command that ensures that none of the files that fit the template are erased until you confirm that you want this done.

We shall illustrate this by using this feature to erase the two files, NEW and NEW.2, on Drive A. The command line to type in is:

```
ERA NEW.* [C] [RETURN]
```

The `[C]` tells CP/M that you want to use the 'Confirm' or 'C' Option of the ERASE command.

A number of the CP/M commands and utilities have Options, which we cover mainly in the reference sections of this manual. They are always specified by putting their name between square brackets at the end of the command line. In some cases, you can omit the closing square bracket.

In this case, what you will see on the screen after typing in this command is:

```
A: NEW                (Y/N)?
```

Type `Y` [RETURN] to confirm that you want this file erased.

You will then get a similar message about NEW.2.

File sizes

Before you can say whether there is enough room for a file on a disc, you need to know three things – how big the file is; how much free data space there is on the disc; and whether there is room in the directory for its name. The directories on PCW9512 discs can't hold more than 256 names.

You can find out how big the PROFILE.SUB file is through the command line:

```
DIR PROFILE.SUB [SIZE] RETURN
```

What this does is to use an extra features of the DIR command provided by the DIR utility – the SIZE option. DIR searches through the directory as before but this time it displays, not just the filename and the filetype, but the size of the file as well.

Among the information that should now be on your screen is:

```
A: PROFILE  SUB   1k
```

This tells you that PROFILE.SUB occupies 1k of disc space and so there will have to be at least 1k of free space on the disc if you are to put a second copy of this file on it.

The disc in the drive can store up to 720k of data, while the Memory Disc can hold about half that amount.

The 'k' here stands for Kilobyte and it is the unit in which disc space is always measured. It corresponds to roughly 1000 characters.

The next thing to do is to find out how much free space there is on these discs. The utility to use here is SHOW and the command line you need is:

```
SHOW RETURN
```

Up on the screen will come something like this:

```
A: RW, Space:  11k
M: RW, Space:  296k
```

which tells you that the amount of free space on the disc is 11k, which is plenty to hold a second copy of PROFILE.SUB, and that the corresponding figure for the Memory Disc is 296k. The 'RW' tells you that the PCW9512 is allowed to both read from and write to discs in Drives A and M.

The fact that the status of the drive is RW is no guarantee that you will be able to write to the disc in the drive. If the Write Protect Hole on the disc is open, you will always be prevented from writing to that disc and from erasing or renaming any of the files.

The remaining check is that there is room in the directory for the new filename. The maximum number of names that can be held in the directory is 256 and once that number has been reached, no more files can be written onto the disc, however much free space there is available on the disc.

SHOW is again the utility to use, but this time with one of its options. The command line to use is:

```
SHOW A:[DIR] RETURN
```

Up on the screen will come something like:

```
A: Number of free directory entries:  138
```

That confirms that you have both enough room both on the disc and in the directory for the new file.

So far, you have been using the CP/M commands to manipulate PROFILE.SUB without knowing what this file contains. You can find out with the aid of another built-in command, TYPE.

The command line that lists out its contents is:

```
TYPE PROFILE.SUB RETURN
```

If you do this, you will see that each line of the file is rather like the commands you have been typing in yourself. We will explain why next.

Some shortcuts to take

A useful facility of CP/M is that it lets you put a number of command lines into a file and then just type one command line to get exactly the same effect as typing all the commands in separately.

The command you type in uses the SUBMIT utility and the file holding the command lines must have the filetype SUB. PROFILE.SUB is just such a file, and there are two other SUB files on the CP/M Start-up disc – LOGO.SUB which contains a series of commands that sets up everything ready for using Dr. Logo, and RPED.SUB which contains the commands needed to run the RPED Text Editor.

To make use of the commands stored in PROFILE.SUB, you simply have to type:

```
SUBMIT PROFILE RETURN
```

and you will see the commands obeyed. (You don't have to give the filetype because it has to be SUB.) It will take a little time because most of the operations copy fairly large files to the Memory Disc.

PROFILE.SUB is a special SUB file. It is accessed by a SUBMIT command embedded in the file that loads CP/M, and the command lines within it will always be obeyed every time you load CP/M.

Most of the commands in PROFILE.SUB are PIP commands, copying utilities on your Start-up disc to the Memory Drive. The other command line in the file uses the SETDEF utility to instruct CP/M to look for its utilities on more than one drive. This is another useful shortcut provided by CP/M.

The particular form used here:

```
SETDEF M:,* [ORDER=(SUB,COM)]
```

tells CP/M to look first on Drive M and then on the default drive and to execute the commands in a SUB file in preference to running a program with the same name. (Using an asterisk to represent the default drive is special to the SETDEF utility.)

A final shortcut to mention here are the keystrokes you can use to save effort in typing in and correcting command lines.

Rather than use the [←DEL] key to rub out everything back to the part of the command line you want to correct, you can use the cursor keys [←] and [→]. You can then use the [DEL→] and [←DEL] keys to erase characters and type in any new characters you want at the cursor position.

You can also use the COPY key to recall the previous command line. This is covered, alongside details of other editing shortcuts, in the section on Command Line Editing (Section 2.5).

Your PCW9512 is now well set up for working with CP/M application programs. Chapter 3 contains advice on buying and running software, while special sections within this part of the User Guide tell you about writing and running BASIC and LOGO programs.

From time to time, you will need to check up on how CP/M itself operates. For this, we have provided Chapter 2, the separate sections of which describe how to carry out particular actions – including setting up the printer.

1.5 When programs need two drives

A number of programs are designed for use on computers with two disc drives. These programs can still be run on a PCW9512, even though it only has one disc drive.

The reason you can do this is that the PCW9512 can pretend to CP/M that there are really two disc drives – called Drive A and Drive B. CP/M then alternates between addressing the disc drive as Drive A and addressing it as Drive B, according to the needs of the application program.

The moment the drive is changed from Drive A to Drive B, the message in the bottom right hand corner of the screen changes to `Drive is B` and you will get a message asking you to replace the disc currently in the drive by the disc 'for Drive B' – – ie. the one that you would use in the second drive if you had such a drive.

Similar messages appear when the drive is changed from Drive B to Drive A.

You can get a feel for how this works using the PIP utility to create a copy of BASIC.COM on the 'Documents' disc you prepared in the initial preparatory session (Part I, Chapter 1).

In this example, the disc to put in 'Drive A' is the 'Documents' disc and the one to put in 'Drive B' is the CP/M Start-up disc.

Start with the CP/M Start-up disc in the drive (with Side 1 uppermost). The command line you need is:

`PIP A:=B:BASIC.COM` RETURN

This tells CP/M to make a copy of BASIC.COM, which it will find on the disc in Drive B, and to store the copy under the same name on the disc in Drive A.

The first message you will get is:

```
Please put the disc for B: into the drive and press any key
```

In general, you would now release the disc from the drive, insert 'the disc for B:' with Side 1 uppermost, and press, say, the space bar. However, in this case the disc for B: is the one currently in the drive – so all you have to do is press the space bar. The computer then reads BASIC.COM into its memory.

It then puts up the message:

```
Please put the disc for A: into the drive and press any key
```

Release the disc from the drive and insert your 'Documents' disc (again with Side 1 uppermost). Press the space bar and the system writes the copy it has made on the disc.

You can check that this has been done by typing:

```
DIR BASIC.COM RETURN
```

Although copying files from one disc to another can be done using just Drives A and B in this way, we would always recommend using Drive M as an intermediary storage area, ie. copying the file first onto the Memory Disc, changing the disc in the drive and then copying the file from the Memory Disc to the new disc in the drive. Copying via the Memory Disc is more straightforward to understand and so less prone to error.

Chapter 2

Which commands to use

This chapter looks at the tasks you are likely to want CP/M to do for you. It is not an exhaustive list of what the CP/M commands and utilities do.

Each section covers one general activity, describing the commands you will need and how to use them for the job in hand in more detail than was possible in Chapter 1.

If you need to know more about a particular command or utility, you can look it up in Chapter 5.

The topics covered are:

Assessing the available space
Copying discs
Copying files
Creating files
Editing the command line
Editing text files
Erasing files
Finding the size of a file
Formatting discs
Listing the directory
Listing a file
Organising your discs
Operating the printer
Personalising your system
Protecting your files
Renaming files
Resetting the machine
Shortening the command line
Switching which disc is read and written
Making use of 8000 series discs

Throughout this chapter, we assume that the utility you require for any command is either on the disc in the default drive or that you have set the disc search order (see Section 2.18) so that the utility is automatically found.

If neither is the case, you will have to include the drive the utility is on as part of its name. For example, you may have to type:

`M:PIP M:=`*file*

to copy a file on the default drive into the Memory Disc, if the copy of PIP you want to use is on the Memory Disc.

Conventions

Place-holders This chapter uses words printed in italic as 'place-holders', representing parameters that you will have to specify. For example, *drive*: should be replaced in your command line by `A:`, `B:` or `M:` (or omitted if the required drive is the default drive), while *file* should be replaced as much of the file's full specification (*drive*:*filename*.*filetype*) as is needed to identify the file.

The terms used are always explained in the text accompanying the command line and supported by examples.

The rest of the command line should be typed exactly as shown. In particular, you must be careful to use the correct type of brackets. If square brackets [and] are shown, you cannot use round brackets (and) instead.

Control codes are given as 'Control-*character*'. This is to be consistent with other guides to CP/M. There is no Control key on the the PCW9512 keyboard.

The key to press will often be one of the special function keys but [ALT]+*character* will always work as well. The actions of the special function keys are listed in Section 2.5 'Editing the command line'.

Internal codes are given in two forms. One way is as a decimal number; the other is as a Hexadecimal number. Hexadecimal numbers are to the base 16 and are made up by a # followed by two characters. Each of these characters can be one of the digits 0...9 or one of the letters A...F

2.1 Assessing the available space

The easiest way of finding out how much free space there is on a particular disc is to use the SHOW utility.

The simplest form of SHOW displays the free space on all the discs in currently logged-in drives, along with what type of access is allowed to that disc. For example, the screen could look like this:

```
A>SHOW
A: RO, Space:  44k
M: RW, Space: 158k
```

This tells you that the discs CP/M currently has access to, are the one in Drive A and the Memory Disc and that while you are allowed to read from and write to the Memory Disc, you may only read from the disc in Drive A. (`RW` stands for Read-Write; `RO` for Read-Only). It also tells you that you have 44 kilobytes of free data space on the disc in Drive A but 158 kilobytes still free in the Memory Disc.

You can display just the information about one particular disc by typing, for example, `SHOW M:` The screen display would then be:

```
A>SHOW M:
M: RW, Space: 158k
```

If you want to find out the number of free directory entries on a particular disc and thus the maximum number of new files you could store on that disc, the command to use is `SHOW` *drive*`:[DIR]`

For example, the screen could look like this:

```
A>SHOW A:[DIR]
A: Number of free directory entries: 12
```

2.2 Copying discs

Making copies of discs on the PCW9512 involves using the DISCKIT utility. If necessary, DISCKIT will also format the disc being written to as part of the copying process.

DISCKIT presents menus to help you select the correct options for the job you want to do and puts up messages to tell you what to do or to advise you of any errors that have occurred.

Before you start copying, check that the Write Protect Holes on your CP/M Start-up disc and the discs you intend to copy are open so that you cannot spoil them by accidentally writing to the disc. (There is a diagram in Chapter 2 of Part I showing the position of the Write Protect Holes and how they open and close.)

Start with your CP/M Start-up disc in Drive A (the lefthand drive if you have two) with Side 1 uppermost or with the file called DISCKIT.COM copied onto the Memory Disc.

Then type the command: `DISCKIT` [RETURN] after a system prompt. This runs the DISCKIT program, which starts by telling you to remove any discs you have in your disc drive(s). (If all you see is `DISCKIT?`, CP/M hasn't found the DISCKIT program on the disc(s) it searched. If your copy of DISCKIT is on Drive M, you may have to type the command `M:DISCKIT`)

When you have done this and pressed a key (say, [ENTER]), it then displays further messages. The first of these offers the choice of Copy, Format or Verify (or Exit from DISCKIT), and tells you which function key to press to select the desired action. In this instance, you want Copy ie. the [f5] key.

If you have just one disc drive, the next screen merely asks you to type `Y` to confirm that you want to copy the contents of one disc onto another.

If your system has two disc drives, the next screen will ask which drive you want to read from (press [f3] for Drive A; [f1] for Drive B). This is followed by a message asking which drive to write to (press [f3] for Drive A; [f1] for Drive B). You will then be asked to type `Y` to confirm that this is what you want to do.

The process of copying a disc may take place in a number of parts – each part copying a section of the information on the disc to READ onto the disc to WRITE. The messages that follow prompt you to put the right disc in at the right time and tell you how the copying process is progressing (counting through the tracks, numbered 0...159, as these are copied).

The messages are designed to be self explanatory: for example, if the PCW9512 needs a disc to be inserted in a particular drive, you will see a message like:

```
Insert disc to READ
Press any key to continue
```

or

```
Insert disc to READ in B:
Press any key to continue
```

Put the disc to be copied into the drive with Side 1 uppermost. When the corresponding `WRITE` message appears, insert the disc you want to copy to, again with Side 1 uppermost. Remember that copying can take place in a number of parts – each copying a section of the information on the disc to READ onto the disc to WRITE.

If, in swopping discs in and out of a single disc system, you mix up the disc you are reading from with the disc you are writing to, DISCKIT will display an appropriate message and allow you to change to the correct disc before continuing.

Any error messages that appear should also be self explanatory, but if you feel in need of extra help, refer to Chapter 5 where full details of the DISCKIT messages are given.

Once the process of copying one disc has been completed, DISCKIT tells you to remove all discs from the drives and then gives you the option of copying another. If this is what you want, type `Y` and follow all the steps of copying a disc again.

2.3 Copying files

The utility that makes a copy of a file either on the same disc or on a different disc is the Peripheral Interchange Program, PIP.

As you might suppose from its full title, this utility is used for more actions than just copying files from disc to disc. Details of the options are given in Chapter 5.

Copying one file

The fundamental command needed to copy files is:

`PIP` *destination=source*

where *source* represents the name of the file to be copied and *destination* the name of the new file which is created to hold the copy.

This command will work whatever the details of the file you want to copy and wherever you want to store the new file. For example:

`PIP NAME.TXT=MYNAME.ADR`
makes a copy of a file on the default drive called MYNAME.ADR and stores it on the default drive as NAME.TXT.

`PIP M:ABC.TXT=A:XYZ.TXT`
makes a copy of the file on Drive A called XYZ.TXT and stores it on the Memory Disc as ABC.TXT.

When you want to copy the file to a different disc but retain the original filename and filetype, there is a shorter command you can give:

`PIP` *destination-drive*`:=`*source*

For example:

`PIP M:=MENU.COM`
makes a copy of a file on the default drive called MENU.COM and stores it on the Memory Disc also as MENU.COM.

`PIP M:=A:USEFUL.SUB`
makes a copy of a file on Drive A called USEFUL.SUB and stores it on the Memory Disc also as USEFUL.SUB.

This form of the PIP instruction can't be used to make a second copy of a file on the same disc because you can't have two files with identical filename and filetype on the same disc.

As a general rule, if the destination file already exists, the old file contents are erased as part of the copying process.

Copying a group of files

In common with many other CP/M commands, PIP allows you to use Wildcards to reduce the number of instructions needed to copy a number of files from one disc to the other. The characters that can be used as wildcards are * and ?

An asterisk is used to represent any valid group of characters. It can replace a whole filename or filetype or complete a filename or filetype when you quote the character(s) that start it.

A question mark represents a single character or blank in the same position as itself.

For example:

`PIP M:=A:*.COM`
makes copies on the Memory Disc of all the .COM files on Drive A.

`PIP M:=A:*.*`
makes copies on the Memory Disc of all the files on Drive A.

`PIP M:=A:PROG??.*`
makes copies on the Memory Disc of all the files on Drive A whose filenames have no more than six characters and start PROG

`PIP M:=A:PROG*.*`
makes copies on the Memory Disc of all the files on Drive A with filenames starting PROG.

These versions of the PIP instruction cannot be used to produce copies of a file on the same disc as the original.

Carrying out a series of copy instructions

When you have a number of files to copy, you won't always be able to find a template that picks out just the files you want. So instead of using one PIP command to copy all the files, you will have to use a number of separate PIP commands. To help you do this, PIP has a special Multiple Command Mode in which it prompts you for the next file to copy.

To start using PIP in Multiple Command Mode, you just type:

`PIP`

This command loads the PIP utility into memory and starts it running. PIP then prompts you for the details of the copy you want to make by displaying an asterisk on the screen. You then type these details in the form:

destination=source

In other words, what you type is the PIP command for the copy you want to make but without the PIP. For example, you might type:

`NAME.TXT=MYNAME.ADR`

PIP makes the copy you have specified and then prompts you for details of the next copy you want it to make by displaying another asterisk – and so on until you simply type RETURN after the asterisk. Typing just RETURN leaves PIP and returns you to the CP/M prompt. So, from start to finish, the copy operation might go something like this:

```
A>PIP [RETURN]
* NAME.TXT=MYNAME.ADR [RETURN]
* M:=A:USEFUL.SUB [RETURN]
* M:=A:*.COM [RETURN]
* [RETURN]
A>
```

2.4 Creating files

There is more than one way of creating a new file under CP/M.

For shorter files such as SUBMIT files (see Section 2.18), we recommend using RPED – the BASIC text editor supplied on your CP/M Start-up disc. For longer files, we suggest using the LocoScript word processor to prepare the file and then use LocoScript's 'Make ASCII file' option to create a version of this file that is clear of all the special LocoScript layout codes. (Full details of how to make an ASCII file are given in Part II, Session 15.) Another option you have is to use CP/M's own Text Editor ED, details of which are given in Chapter 5 of this part of the User Guide.

These each have their own ways of handling the characters you type in, so follow the instructions carefully.

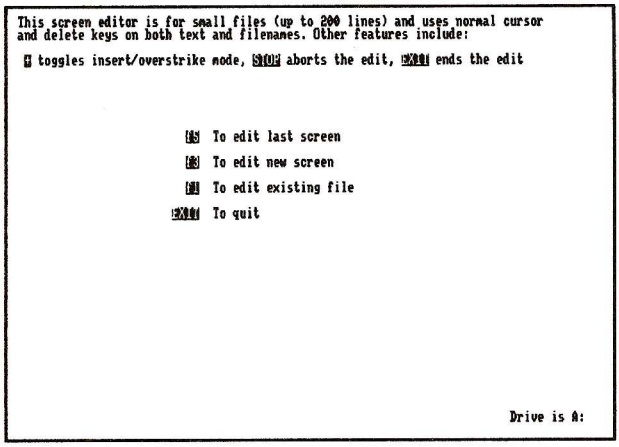
The first thing to do is to check that there is enough room for the new file on the disc you propose to use. Use the SHOW command for this (see Section 2.1).

Using RPED to create a file

RPED is a fairly simple Text Editor. Its advantage is that it displays a constantly updated version of the file you are working on and allows you to use the cursor keys etc. to move around the text and edit it.

To use it, insert your CP/M Start-up disc in Drive A and just type `A:RPED` after a system prompt. (If you don't use the supplied PROFILE.SUB on your Start-up disc, CP/M may simply respond with `RPED?`. If this happens, try typing `SUBMIT A:RPED.`)

CP/M then loads first BASIC and then RPED. When it has finished loading, you will see a display like this:



The top few lines of the screen explain in general terms how RPED works. Read this carefully. Displayed in the centre of the screen are the keys you need to press either to start editing an existing file or to create a new file or to stop using RPED.

The key to press to create a new file is [f3]. Press this now. RPED then asks you to type in the name for your new file.

Type this in as *filename.typ*. For example, if the file you are preparing is a SUBMIT file, you might type `MYPROG.SUB`. This name is then inserted in the box provided for it.

If you make any mistakes typing this name, use the Cursor keys to move back to the part of the name you want to change and then re-type this part of the name. You should also use this technique to change the drive letter at the start of the file name if you want to store the file on a different drive to Drive A.

When the name is correct, press [RETURN]. RPED then displays a second screen – which is essentially a blank piece of paper on which to type your file. Type the file line by line, pressing [RETURN] at the end of each line to move to the start of the next line.

If you make any mistakes in your typing, simply use the Cursor keys to position the Cursor where you want to make the change, use [DEL→] and [←DEL] to delete characters you no longer want and type in fresh characters. If you want to get rid of a line altogether, move the Cursor to the line and press [CUT]. If you want to insert a new line move the Cursor to the beginning of the line that will follow the new line, hold down the [ALT] key and press [↓]. (**Note:** These are just the most straightforward

ways RPED has of editing the file: other techniques are described in Section 2.6 'Editing text files'.)

When you have finished preparing your file, press [EXIT]. The file is then saved on disc and you are returned to RPED's first screen so that you can, for example, create another file by pressing [f3] again.

Press [EXIT] to finish working with RPED.

2.5 Editing the command line

You can always use the [← DEL] key to rub out characters when you make a mistake or change your mind about the command you want to execute.

However, CP/M Plus provides some short cuts to getting the command line typed in correctly – including using an earlier command as part of the current command.

These short cuts are taken by pressing particular keys or combinations of keys on the PCW9512 keyboard.

The keys you want are as follows:

[←]	to move the cursor back one character
[→] or [CHAR]	to move the cursor forward one character
[LINE] ([SHIFT] + [EOL])	to move the cursor to the beginning of the line
[EOL]	to move the cursor to the end of the line
[ALT] + [↓]	to move the cursor to the beginning of the next line without executing the current command line
[DEL →]	to delete the character under the cursor
[← DEL]	to delete the previous character
[ALT] + [DEL →]	to delete from the cursor to the end of the line
[ALT] + [← DEL]	to delete from the start of the line to the cursor
[RELAY]	to retype the line up to the current position of the cursor
[COPY] or [PASTE]	to copy the previous command line into the current line at the cursor position

Typing a character causes that character to be inserted at the position of the cursor. The cursor and any characters to its right are moved one character to the right.

Using the [COPY] key together with the other editing keys can avoid much re-typing if you want to execute a series of similar commands.

2.6 Editing text files

There are three tools on your PCW9512 that you can use to edit text files – the BASIC Text Editor RPED, the LocoScript word processor and the CP/M Text Editor ED.

If the file you propose to edit is less than 20k long, we suggest you use the supplied BASIC text editor, RPED. This displays a constantly updated version of your file on the screen and allows you to use the Cursor keys etc. to move around the file and edit it. Details of how to use RPED to edit a file are given below.

Alternatively, you might use the CP/M Text Editor to edit this file – see the description of ED in Chapter 5.

When you want to edit a larger file, we suggest using LocoScript – even though the file you want to edit is not a LocoScript file. To do this, you:

- load LocoScript
- create a new LocoScript document
- use the f1 'Insert text' option to read the file you want to edit into your new LocoScript document
- use LocoScript to edit the file
- save the resulting document, and finally
- use the Make ASCII file option to create a version of the document that is cleared of LocoScript's special codes: this is your edited file.

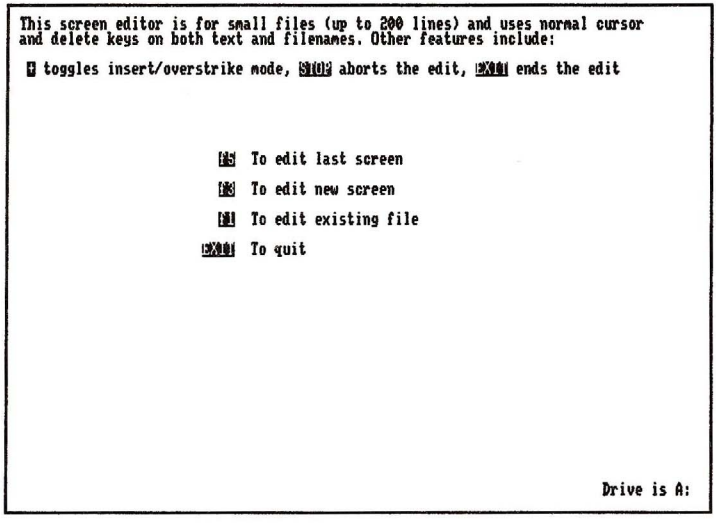
(This may seem complicated but it is in fact a lot easier than it looks.)

The LocoScript 'Insert text' and 'Make ASCII' file options are explained in Part II, Session 15.

Using RPED to edit a file

To use RPED, insert your CP/M Start-up disc in Drive A and just type `A:RPED` after a system prompt. (If you don't use the supplied PROFILE.SUB on your Start-up disc, CP/M may simply respond with `RPED?`. If this happens, try typing `SUBMIT A:RPED`.)

CP/M then loads first BASIC and then RPED. When it has finished loading, you will see a display like this:



The top few lines of the screen explain in general terms how RPED works. Read this carefully. Displayed in the centre of the screen are the keys you need to press either to start editing an existing file or to create a new file or to stop using RPED.

The key to press to edit an existing file is [f1]. Press this now. RPED then asks you to type in the name of the 'Source' file – that is, the file you want to edit.

Type this in as *filename.typ*. For example, if the file you want to edit is MYPROG.SUB, type `MYPROG.SUB`. This name is then inserted in the box provided for it.

If you make any mistakes typing this name, use the Cursor keys to move back to the part of the name you want to change and then re-type this part of the name. You should also use this technique to change the drive letter at the start of the file name if the file is on a different drive to Drive A.

When the name is correct, press [RETURN]. RPED then asks you to give it the name of the Destination file – that is, the file you want to save the edited version in. If you want the new version to replace the existing file, just press [RETURN]: otherwise edit the name in the box as described above and then press [RETURN].

When you press [RETURN], RPED displays the current file (or, at least, the first section of this file) on a second screen. You can now move the Cursor to any point in the file by pressing the Cursor keys and you can make changes as follows:

- To delete characters you no longer want, position the Cursor where you want to make the change and then use [DEL→] and [←DEL] as appropriate.
- To delete a whole line, position the Cursor anywhere on the line and press [CUT]
- To delete from the current Cursor position to the end of the line, hold down [ALT] and press [DEL→]
- To delete from the beginning of the line to the current cursor position, hold down [ALT] and press [←DEL]
- To insert new text, position the Cursor so that its lefthand edge is at the point where you want to insert the new text and then type your new text.
- To overwrite existing text, position the Cursor at the start of the section you want to overwrite, press [⊞] and then type your new text. When you have finished, press [⊞] again – or anything you type will continue to overwrite your existing text.
- To insert a new line, move the Cursor to the beginning of the line that will follow the new line, hold down [ALT] and press [↓]
- To abandon all changes and leave RPED, press [STOP]

Note: With RPED, you effectively edit a line at a time and so you must plan your editing in terms of correcting each line separately. One effect of this is that (unlike LocoScript) you can't split one line into two by positioning the Cursor where you want to make the break and then pressing [RETURN]. Pressing [RETURN] merely moves the Cursor to the start of the next line.

When you have finished preparing your file, press [EXIT]. The file is then saved on disc and you are returned to RPED's first screen so that you can, for example, edit another file by pressing [f1] again or re-edit this file by pressing [f5].

Press [EXIT] to finish working with RPED.

2.7 Erasing files

You delete files you no longer need by using an ERASE command. The space taken up on the disc by the data and the entry in the directory are automatically reclaimed for use by a later file.

The most general form of this command is:

`ERASE` *file* or `ERA` *file*

where *file* represents the name of the file to be erased.

For example:

`ERA MYFILE.COM`
erases the file on the default drive called MYFILE.COM

`ERASE M:TEMP.TXT`
erases the file on the Memory Disc called TEMP.TXT

If no file is found with exactly the given name, the screen message `No File` will appear.

The ERASE command also allows you to use Wildcards to reduce the number of instructions needed to erase a number of files.

The characters that can be used as wildcards are * and ?

An asterisk is used to represent any valid group of characters. It can replace a whole filename or filetype or it can complete a filename or filetype when you quote the character(s) that start it.

A question mark can only represent any single character or blank in the same position as itself.

The wildcard version of the ERASE command needs to be used with care. Under CP/M, a file erased in error cannot be restored.

A way of guarding against this while still taking advantage of the compact wildcard instruction is to use the Confirm Option of the ERASE command. The usual command is followed by `[C]` or `[CONFIRM]`. However, this option can only be used when the associated utility ERASE.COM is available either on the default drive on another drive that you tell CP/M to search (either directly by putting the drive letter followed by : at the start of the command or indirectly by using SETDEF to put the drive on the search path – see Session 2.18).

As CP/M finds entries in the disc's directory that match the given specification, it displays the filename, along with a message asking you to confirm whether this file is to be deleted. It then proceeds to find the next match.

For example:

```
ERA *.DAT[C]
```

finds all the files on the default drive that have the filetype DAT and asks you to confirm that you want each one erased (assuming that ERASE.COM is either in the default drive or on the search path).

2.8 Finding the size of a file

If you want to know the size in kilobytes of one or more files, the command to use is a DIR command with the SIZE option. CP/M recognises that you want this additional information if you add `[SIZE]` to the end of your DIR command. However this option can only be used when the associated utility DIR.COM is available either on the default drive or on another drive that you tell CP/M to search (either directly by putting the drive letter followed by : at the start of the command or indirectly by using SETDEF to put the drive on the search path – see Session 2.18).

You get this information only for the files you want, either by going through one by one giving the full name of each file you want or by making appropriate use of Wildcards.

The characters that can be used as wildcards are * and ?

An asterisk is used to represent any valid group of characters. It can replace a whole filename or filetype or it can complete a filename or filetype when you quote the character(s) that start it.

A question mark can only represent a single character or blank in the same position as itself.

For example:

```
DIR PR???.*[SIZE]
```

displays the names and sizes of all those files with at most five letter filenames starting with PR (assuming that DIR.COM is either on the default drive or on a drive on the search path).

2.9 Formatting discs

Formatting is the preparation a blank disc needs before data can be stored on it.

If you also want to be able to load CP/M from the new disc, you must both format the disc and then put a copy of the file containing the CP/M operating system onto the disc. The operating system is stored in the file called J30CPM3.EMS or a similar name to this. One way of doing this is to copy your CP/M Start-up disc onto your new blank disc, as described in Section 2.2. (Formatting is automatically a part of the copying process.) You can then use the ERASE command to erase all but J30CPM3.EMS from the newly copied disc (see Section 2.7).

Formatting a new disc involves using the DISCKIT utility.

You can format an old disc, but you should remember that this will destroy all the old data.

Start by checking that the Write Protect Holes of your CP/M Start-up disc are open so that you cannot accidentally format this disc. (There is a diagram showing the position of the Write Protect Holes and how they open and close in Chapter 2 of Part I of this User Guide.)

Then ensure that the CP/M Start-up disc is in Drive A or that the DISCKIT utility has been copied into the Memory Disc.

Type `DISCKIT` [RETURN]; then remove any discs from the drive(s) and press a key when prompted. This brings up a set of messages, which offer the choice of Copy, Format or Verify (or Exit from DISCKIT), and tell you which key to press to select the required option. In this instance, the Format option is required and so the [f3] key should be pressed.

(If all you see is `DISCKIT?`, CP/M hasn't found the DISCKIT utility. If your copy of DISCKIT is on Drive M, try typing `M:DISCKIT` [RETURN].)

Users with just one disc drive will then get a message asking them to insert the disc to be formatted. Those with two drives at their disposal will be asked which drive will be used for formatting, and then asked to type `Y` to confirm that this information has been entered correctly.

Place the new disc in the specified drive with Side 1 uppermost and press a key (say, [ENTER]).

Throughout the formatting process, messages can appear at the top of the screen. Most of these should be self explanatory: for instance, no disc in the drive could lead to the screen message:

```
Insert disc to format
Press any key to continue
```

The messages that indicate that some error has occurred should also be self explanatory, but if you need extra help turn to Chapter 5 where the DISCKIT messages are given in full.

2.10 Listing the directory

The command normally used to display information about your files is DIR. This is a built-in command: in some circumstances, it is supported by the DIR utility.

If you simply want a list of the files on a disc, type:

`DIR` *drive*`:`

where *drive* is the letter representing the drive holding the disc and is omitted in the case of the default disc.

For example:

`DIR`
lists out all the files on the default disc

`DIR M:`
lists out all the files in the Memory Disc

If there are also some special files called System Files on that disc, you will be told this once all the Non-system files have been listed. The command needed to list these files is the DIRSYS command.

A detailed discussion of the DIRSYS command is inappropriate here. All you need to remember about DIRSYS is that it works very much like DIR, but only DIR can be enhanced through the various directory searching options.

You can also use the DIR command if you just want to see if a particular file is on the disc you are working with. The command line to type is:

`DIR` *file*

where *file* represents the name of the file.

For example:

`DIR M:MYPROG.COM`
tests if there is a copy of the file MYPROG.COM on the Memory Disc

If it isn't, then `No File` will appear on the screen.

You can use this version of the command, but with Wildcards, to list out details of a group of files.

The characters that can be used as wildcards are * and ?

An asterisk is used to represent any valid group of characters. It can replace a whole filename or filetype or it can complete a filename or filetype when you quote the character(s) that start it.

A question mark can only represent a single character or blank in the same position as itself.

For example:

`DIR M:*.COM`
lists out just those files on the Memory Disc that have the filetype COM

`DIR PR???.*`
lists out only those files on the default disc with filenames that start PR and have no more than five characters.

You can obtain more information about the files by using the Options associated with the DIR command.

To use these options, you must have the companion DIR.COM utility either on the default drive or on the search path you have set with a SETDEF command (see Section 2.18) – or you should tell CP/M where to find it by putting the drive letter followed by : at the start of your command..

Some of the more useful options are `EXCLUDE`, `FULL` and `SIZE`. `EXCLUDE` enables you to list all files **except** those with the given filename; `FULL` makes the directory listing include size and all the special characteristics along with the name of each file; and `SIZE` gives the size of each file listed.

The SIZE option is used most often to discover how big a particular file is, typically just before it is copied from one disc to another.

For example:

`DIR M:MYPROG.COM [SIZE]`
displays the filename, filetype and size in kilobytes of a file on the Memory Disc called MYPROG.COM (assuming that DIR.COM is either on the default drive or on the search path)

2.11 Listing a file

If you want to examine the contents of any text file on the screen, type:

`TYPE` *file*

where *file* represents the name of the file to be listed.

The contents of the file are displayed on your monitor, a screenful at a time. Press [RETURN] to see more.

If you would like to get a print out of the file at the same time, type 'Control-P' ([ALT]+P) before you type the above command. The PCW9512 will bleep when you do this. Now all the text that appears on the screen will be 'echoed' on the printer.

A second 'Control-P' will turn the printer off.

Alternatives to both of these instructions are provided by the PIP utility.

`PIP CON:=`*file*
copies the named file to the screen

`PIP LST:=`*file*
copies the named file to the printer

2.12 Operating the built-in printer

When you turn your PCW9512 on, its printer is set up to print on A4 paper. This will give you up to 61 lines of text, the first line on each page being an inch down from the top and the last half an inch from the bottom.

That will probably suit most of your purposes very well but occasionally you may want the printer to handle a different sort of paper. If you are to continue to use the printer efficiently, you must set the printer up for this new paper. Some application software will do this for you but not all.

You will also want to load paper into the printer and release the paper after the current job is completed. We describe all of these actions below.

Note: For details of all operations on any other printer you use with your PCW, refer to the printer's own manual.

Auto-loading the printer

The printer is set up so that paper resting in the paper guide will be automatically fed into the printer and left so that printing will begin in the correct position.

The actions you have to take are very simple.

First place the paper you wish to use in the paper tray so that its top edge rests against the printer and its lefthand edge is slightly to the left of the third ridge on the paper tray (so that printing will actually start on the paper even if your software doesn't let you set a left margin). If you plan to use continuous stationery, you should have the additional tractor feed mechanism fixed to the top of the printer.

Next pull the Paper Load Lever firmly towards you and then let it back to its 'halfway' position. This also moves the bail bar forward. Note how the bottom line of the screen changes to show the 'Printer Control State'.

The printer itself now feeds the paper in. If the paper is slightly crooked, do not adjust it yet. Push the Paper Load Lever back to its original position and then pull the Paper Release Lever forward, and only then adjust the paper if this is necessary. Then push the the Paper Release Lever back.

A single sheet of paper will now be in the right position for starting printing.

If you are using continuous paper, you will now have to move the paper through further using the Paper Feed Knob until you can engage the paper holes in the tractor feed clips. Then turn the Paper Feed Knob until the print position is approximately $^1/_6$in below the next line of perforations. This is its Top of Form position.

The printer won't print anything until you press [EXIT] but before you do this, check that the printer is set up for the paper you are using. This is described below in 'Changing the paper settings'.

Other printer operations

Further printer operations become possible when the PCW9512 is put into its Printer Control State. These include:

- making the printer ready to print (putting it On-line)
- putting the printer on stand-by (Off-line)
- and releasing the last sheet printed on (Form Feed).

These are the sort of operations that are often done on other printers by pressing buttons on the printer itself.

The PCW9512 enters Printer Control State either when you press the [PTR] key or when you operate the Paper Load Lever on the printer. The PCW9512 also puts itself into Printer Control State if you try to print something while it is waiting for paper.

If the printer is in the middle of printing out some text when you press the [PTR] key, it will halt as soon as it has finished either printing the current line or moving the paper to the next print position.

The principal operations that can be carried out in this state are now indicated on the bottom line of your screen. (Other more subtle operations, such as setting the Line Pitch and setting the type of Print wheel you are using, can also be carried out from Printer Control State: details are given in Appendix II, Section II.1.)

This line also gives you information about the state of the printer.

Scanning from left to right, you will see that the line is divided into either seven or eight separate parts by vertical bars. Each section is effectively a 'switch' which you set by moving the highlighting to it (using the [←] and [→] Cursor keys) and then pressing either the [⊞] or the [⊟] key.

The range of switches you get depends on the state the printer is in.

The first switch indicates whether the printer is working as a Diablo 630 ('Daisy') Printer or as an Epson FX-80 ('Matrix') printer. This switch will usually be set to Daisy; if you need to use the printer as an Epson-compatible, point to this part of the display and press [⊞]

The next switch displays the current state of the printer. This will tell you, for example, if the printer is On-line (temporarily halted), Off-line (permanently halted), Waiting for paper, Active (printing something at the moment) or the Bail bar is out.

You must be On-Line for the printer to print:

- Change from Off-line to On-line by pressing [⊞] (or from On-line to Off-line by pressing [⊟]).
- Clear Waiting for paper by loading some paper.
- Abandon the document that is being printed at the moment by moving the highlighting to RESET at the other end of the line and pressing [⊞]
- Push the Bail bar back in by pushing the Paper Load Lever back.

When the printer is either On-line or Off-line, the next 'switch' will be either `at line:` *n* or `at: TOF`. This gives the current position of the paper as a number of lines of text (*n*) printed with a line spacing of ⅙in. If the message is `at: TOF`, this means Line 1 on continuous stationery but Line 7 on single sheet stationery.

The next two switches are usually LF (for Line Feed) and FF (for Form Feed). To get either of these actions, move the cursor to this action and press [+]. One Form Feed will release the current sheet of paper.

The next two switches allow you to choose the intensity with which the printer strikes the paper and to set the printer for the type of ribbon fitted. Again, move the cursor to the switch you want and use [+] and [-] to set the required values.

When you are happy with the printer settings, just press [EXIT] and continue with whatever you want to do.

Changing the paper settings

The utility you use to change the paper settings on the PCW9512 depends on whether the printer is currently working as a Diablo 630-compatible printer or as a Epson-compatible printer. If it is working as a 630-compatible, you use the DAISY utility; if it is working as an Epson-compatible, you use the MATRIX utility. Both of these utilities are on your CP/M Start-up disc.

(You can see whether the printer is currently working as a 630-compatible or as an Epson-compatible by pressing [PTR] and seeing whether the first 'switch' is `Daisy` or `Matrix`.)

The commands you use are very similar, so the description given here just describes the steps you take when the printer is used as a 630-compatible printer. If it is working as an Epson-compatible, simply type `MATRIX` instead of `DAISY`.

The DAISY command you need simply requires one or more parameters that describe the paper you want to use. Some of these parameters are used to make small adjustments to the way print appears on the page – for example, the line pitch used (6 lines per inch or 8 lines per inch): others set a standard paper format. It is the ones that set standard formats that you are most likely to use.

For example, the DAISY command to use when you change from using A4 paper to A5 paper is:

```
DAISY A5 BOTTOM 44
```

Another common change you are likely to make is from A4 to continuous stationery, the commonest form of which has perforations every 11 inches. The command to use here is:

```
DAISY 11
```

In either case you would change back to A4 single sheets by typing:

```
DAISY A4 BOTTOM 64
```

As these commands are executed, various messages will appear on the screen. These in fact tell you all the setting changes that are made, not that you should need to worry about these.

If you need to change the paper parameters in any other way, turn to Chapter 5 where full details of the DAISY and MATRIX utilities are given.

Troubleshooting the printer

If anything strange seems to be happening when you are printing, put the PCW9512 into Printer Control State by pressing [PTR] – unless the computer has already done this for you. This automatically halts the printer: it also lets you see precisely what the printer is doing.

To show what to do next, we have tabulated some common printer problems.

- Printer does not respond: Printer Control message says `Offline`

With the cursor on `Offline`, press [⊞]. Then press [EXIT] to return to printing.

- Printer does not respond: Printer Control message says `Bail bar out`

Push the Paper Load Lever away from you to return the bail bar to its normal position. Then press [EXIT] to return to printing.

- Printer does not print: Printer Control message says `Waiting for paper`

Check first that paper is loaded into the printer. If there is, check the cursor is on this message and then press [⊡]. Finally press [EXIT] to return to printing.

- Printer does not print: Printer Control message says `Out of paper`

Check first that paper is loaded into the printer. If it is, press [↓] to display the second line of Printer Control switches, and then use the [←] and [→] cursor keys to move the cursor to the `Paper Sensor` switch. Then press [⊞] to set it to `Paper Sensor: Off`. Finally press [EXIT] to return to printing.

- Printer does not respond: Printer Control message says `No printer`

This says that the printer is either not connected or is faulty.

First check that the cable that goes between the printer and the PCW9512 system unit is connected properly. Then move the cursor to the `RESET` button and press [ENTER]

If the `No printer` message does not go away, then either your printer or your PCW9512 could be faulty.

When you have sorted out the problem, press [EXIT] to go back to whatever you were doing.

2.13 Organising your discs

The way files are organised on CP/M discs allows you to put files on the same disc into separate more manageable groups, each with its own directory. You can then work on just the files listed in one directory at a time.

The files in the separate directories are treated as if they belonged to different people. The 'people' are referred to as Users and so each group is given a User Number. User Numbers run from 0 to 15, giving you up to 16 different groups in which to put your files.

All the time you are using CP/M, you have a User Number. This is referred to as the Current User Number. You can always tell what the Current User Number is from the System Prompt. For example, if the system prompt is `3A>`, the Current User Number is 3 but if the prompt just gives the letter of the default drive, then the Current User Number is 0.

In general the files you work with at any time are the ones with the Current User Number. Files with a different User Number are hidden from you. Any new files you create will also have the current User Number.

For example, suppose you had the files MYFILE.A, MYFILE.B and MYFILE.C with User Number 0 and the files YOURFILE.A and YOURFILE.B with User Number 1. While the Current User Number is 0, the files you can process are the MYFILE files and the YOURFILE files are hidden from you. While the Current User Number is 1, the files you can process are the YOURFILE files and the MYFILE files are hidden from you. If the Current User Number is some other number (say, 5), both groups of files will be hidden from you.

Most of the commands only work with files with the Current User Number. However, a few can process files of a different User Number. In particular, you can use the PIP command to create copies of these files either with the Current User Number or with a different User Number. You can therefore 'tidy up' a disc by copying files to a different User Number and then erasing the original copy. However, you may have to change the Current User Number before you erase a file because the only files you can erase are ones with the Current User Number.

To change the Current User Number, type either:

`USER` *number* [RETURN] or *number*: [RETURN]

For example, to change to User Number 3, type either:

`USER 3` [RETURN] or just `3:` [RETURN]

If you wish, you can change the Current Drive at the same time as the Current User Number by typing:

number drive: [RETURN]

For example, you can change to User Number 3 on Drive B by typing:

`3B:` [RETURN]

CP/M responds by changing the System prompt – in this case to `3B>`

In general the only program files that you can run have the Current User Number. The exception to this is program files that have User Number 0 and that have been designated System files (see Section 2.15), which can be run whatever the Current User Number is.

2.14 Personalising your system

There are a number of features of both the PCW9512 and CP/M that you can set up to make your applications programs easier to run. You can:

- Extend what happens when you load CP/M
- Make the function keys generate special characters or whole commands.
- Set up your PCW's output ports ready, for example, to use a modem

Extending what happens when you load CP/M

If you want CP/M to carry out a specific sequence of actions immediately after it has been loaded, you just put the commands you would type to carry out these actions into a special file in User Number 0 called PROFILE.SUB. Any commands in PROFILE.SUB are always executed as part of loading CP/M.

Your PCW9512 was supplied with a PROFILE.SUB as follows:

```
SETDEF M:,* [ORDER=(SUB,COM)]
PIP
< M:=PIP.COM
< M:=SUBMIT.COM
< M:=SET.COM
< M:=DIR.COM
<
```

This copies CP/M utilities into the Memory Disc and sets a program search path such that CP/M will automatically look for programs both on the default drive and on the Memory Disc. If you create your PROFILE.SUB by adding to the supplied file, you will retain these actions as an automatic part of loading CP/M.

Making use of the function keys

If you like, you can make the function keys generate special characters or whole commands. For example, if you have a spreadsheet program, you might want to run this program (which we will call MYSPREAD.COM) by pressing [f1], instead of typing `MYSPREAD` [RETURN]. Similarly, if you finish each session of work by erasing all the .BAK files that have been created (ie. by typing a command like `ERA *.BAK` [RETURN]), you might like to use another function key to generate this command for you.

To make this happen, you will first need to create a special file which holds the details of the keys you want to use and what commands you want the function keys to generate for you. This file is simply made up of a number of lines each of which specify a function key and the command you want to carry out as follows:

`E` *token* `"`*command*`↑M"`

where *token* is the number that represents the function key you want to use and *command* is the command line you would type to get the action you require. The `↑M` effectively presses the Return key at the end of the command for you. If you don't want the function key to 'press' the Return key for you, then you simply miss out the `↑M`.

The tokens for the function keys [f1]... [f8] are #81...#88.

So, to make pressing the [f1] key equivalent to typing MYSPREAD [RETURN] and to make pressing the [f5] key equivalent to typing ERA *.BAK but not pressing the [RETURN] key, you need a 'Keys' file (which we will call FNKEYS) with the following lines in it:

```
E #81 "MYSPREAD↑M"
E #85 "ERA *.BAK"
```

This 'Keys' file just records the details of the actions you want these specific function keys to have. To put these actions into practice, you will have to type the command:

```
SETKEYS FNKEYS
```

Thereafter, pressing [f1] will command CP/M to run your MYSPREAD program and pressing [f5] will generate ERA *.BAK for you – until you reset your machine.

This SETKEYS command may be worth putting in your PROFILE.SUB file.

Note: Setting up the function keys is just one of the things you can do by setting up a Keys file such as FNKEYS and then using a SETKEYS command to put the Keys file into action. Further information is given in Appendix I. It should, however, be pointed out that while the commands themselves are easy to use, it is also easy to set up your keyboard so that it is impossible to use. You should therefore always plan and check over your Keys file very carefully.

Setting up the output ports

If you prefer to use a different printer to the built-in one or you want to link your computer to electronic mail services like Telecom Gold or one of the many computing Bulletin Boards, then you need to set up the output ports on your system to support this.

Again, it is a good idea to include the commands you need in your PROFILE.SUB file.

To use a different printer

When you want to use a different printer, you will probably connect this to your PCW via the Parallel Printer port on the back of your machine. So you need to set up your system to send all the information that it would normally send to the built-in printer to the Parallel Printer port.

To do this, you use the DEVICE utility and the command you want is:

```
DEVICE LST:=PAR
```

This tells CP/M to direct any printer (LST:) information that programs generate to the Parallel Printer port (PAR).

Further details of the DEVICE utility are given in Chapter 5.

To set up a modem link

Before you can communicate with electronic mail services or Bulletin Boards, you need a modem which you attach to your PCW via a Serial Interface connected to the Expansion port at the back of your machine. (See Part I, Chapter 3 for details of buying and attaching such an interface.)

The Serial Interface then needs to be set up so that it sends information to the modem in the correct form for the modem to handle and also so that it interprets any information that it receives back from the modem correctly. The utility you use to do this is called SETSIO. This utility allows you to set:

- the rate at which information is transferred (the baud rate)
- the basic characteristics of the data (ie. the number of data bits, the number of stop bits and the parity of the data)
- the rules about how information is transferred (ie. the protocol of the transfer)

The details you set depend on your modem and the service you are linked to, but the following command line illustrates the sort of command you will need. This sets a fairly common set of requirements.

```
SETSIO 300, BITS 8, STOP 1, P NONE, XON OFF, H ON, I ON
```

(P stands for PARITY, H for Handshake, I for INTERRUPT. We recommend that set both I and H to ON provided your modem supports handshaking.)

Further details of the SETSIO utility are given in Chapter 5.

2.15 Protecting your files

As you store programs and data in files, there are a number of questions you should give thought to:

- Do you want to protect the file against being accidentally deleted or overwritten?
- Does the file contain information that is crucial to using the computer – or a program that you want to be able to use whatever User group you are working with (see Section 2.13)?
- Do you want to stop it being deleted, modified or even used by someone else?

If you regularly make back-up copies of your valuable files – something we advise most strongly – you may not need to take any special steps to protect your files. If this is the case, you don't need to read any further.

Protecting files is all about giving the files the right set of labels. For example, if you don't want the contents of a file to be overwritten, then you give the file a label to say that it can only be read. These labels are often called Attributes, they can be changed at any time during the lifetime of the file and they are copied when the file is copied.

Protecting against accidental deletion

The way to ensure that your important files are not lost through being accidentally overwritten or deleted is to give them a `RO` (Read-Only) label. The files are then said to be Write-protected, and they stay Write-protected until you replace the `RO` label with a `RW` (Read-Write) label.

The utility you use to mark a file Read-Only or Read-Write is the SET utility and you use it as follows. To mark a file Read-Only, you type the command:

`SET` *file* `[RO]`

To mark it Read-Write, you type the command:

`SET` *file* `[RW]`

So, for example, to make MYFILE.A Read-Only, you would type the command:

```
SET MYFILE.A [RO]
```

Separating vital programs from other files

Programs which are vital to your system are protected by making them System files by giving them the label SYS. All other files have the label DIR.

System files:

- are hidden when you list the names of the files on a disc
- aren't copied, erased or renamed alongside a group of 'non-system' files

Another reason for labelling a program as a System file is to make it available for use when the Current User Number is not the program's User Number. However, this only applies to program files with User Number 0.

The utility you use to make a file a System file is again the SET utility and you type the command:

`SET` *file* `[SYS]`

So, for example, to make MYPROG.COM a System file, you would type the command:

```
SET MYPROG.COM[SYS]
```

To make it a 'non-system' file again, you would type the command:

```
SET MYPROG.COM[DIR]
```

Applying passwords to files

If you are worried about a file being read or changed by someone else, you can give the file a password which must be typed in before the file can be used.

CP/M gives you a choice of actions to protect through a password, which you select by setting the Protection mode as follows:

Reading, copying, changing, deleting and renaming	the READ mode
Changing, deleting and renaming but not reading or copying	the WRITE mode
Just deleting	the DELETE mode

You set both the password and the Protection mode with SET commands as follows.

The first step is to ensure that the disc holding the file has password protection 'turned on'. This is done by using the command:

`SET` *drive*`: [PROTECT=ON, PASSWORD=`*password*`]`

(You need the password to stop someone else simply coming along and turning the password protection off!)

You can then set the password and the protection mode you want for individual files on this disc by typing commands of the form:

`SET` *file* `[PASSWORD=`*password*`, PROTECT=`*mode*`]`

For example, to protect MYFILE.A against being changed, deleted or renamed, you might type the command:

```
SET MYFILE.A[PASSWORD=SECRET, PROTECT=WRITE]
```

Once a file has been given a password, you have to give this password before any of the protected actions can be carried out. You do this either by following the name of the file in your command line with *;password* or by setting the 'Default' password to this password by using the command:

`SET [DEFAULT=`*password*`]`

To clear the password protection, you have to set the Protection mode to NONE – but before you can do this, you have to show that you have a right to do this by quoting the password immediately after the name of the file as follows:

```
SET MYFILE.A;SECRET[PROTECT=NONE]
```

Note: If you copy a password-protected file, the new file you create will also be password protected if you:

- either copy the file to a different disc, without changing its name
- or put *;password* after the name of the destination file

In the first case, the copy is given the same password and the same Protection mode: in the second case, the copy is given the new password and the Protection mode is set to READ.

You can only copy a group of files that includes password-protected files if they all have the same password and you set the Default password to this password first.

2.16 Renaming files

The renaming of files is handled by the built-in RENAME command, in some cases supported by the RENAME utility.

Renaming is just a change of name: the data or program file itself is not altered in any way by RENAME.

The most general form of the command is:

`RENAME` *new-name=old-name* or `REN` *new-name=old-name*

where *old-name* represents the current name of the file and *new-name* the name you wish to change it to.

For example:

`REN DOC.BAK=DOC.TXT`
changes the name of the file DOC.TXT on the default disc to DOC.BAK

`REN M:RECORDS.Y85=M:RECORDS.LST`
changes the name of the file RECORDS.LST on the Memory Disc to RECORDS.Y85

The only restriction on your choice of *new-name* is that it must not be the name of any existing file on that disc.

The command will fail if you quote a different drive for the file under its old name to that you quote with its new name.

If CP/M fails to find *old-name* in the directory, the message `No File` will be displayed on the screen.

You can reduce the number of instructions needed to rename a number of files by appropriate use of Wildcards.

The characters that can be used as wildcards are * and ?

An asterisk is used to represent any valid group of characters. It can replace a whole filename or filetype or it can complete a filename or filetype when you quote the character(s) that start it.

A question mark represents a single character or blank in the same position as itself.

But if you do decide to use the wildcard option, you must remember to make the wildcards in *old-name* and *new-name* identical. For example, `REN *.TX1=*.TEX` and `REN A*.T*=S*.T*` are valid commands but `REN A*.TEX=A*.T*` isn't.

2.17 Resetting the PCW9512

If you or your program get confused at any stage, the simplest way to sort things out is often to 'Reset' your machine. Resetting the PCW9512 returns it to the state it was in just after you switched on. You could, of course, get the same result by switching your machine off, waiting a few seconds and then on again – but that wouldn't be as good for your machine.

To reset your machine, remove all discs from the disc drives: then hold down the [SHIFT] and [EXTRA] keys before pressing the [EXIT] key. This clears the PCW9512's memory, including the Memory Disc.

Then insert your CP/M Start-up disc and press the space bar, just as if you had just turned the machine on.

You will see the familiar pattern of horizontal lines appear, followed one by one by command lines from PROFILE.SUB, if this exists.

When the PCW9512 is ready, an A> system prompt will appear on the screen on a fresh line.

2.18 Shortening the command line

You can shorten many of your command lines by extending the way CP/M interprets the commands you give it:

- by putting sequences of commands you use often into special files called SUBMIT files. Then you will need just one command to get CP/M to carry out the whole sequence.
- by setting up a search path such that when you give CP/M the name of a program to execute, it doesn't just look for a .COM file on the Default drive but also looks on other drives and for SUBMIT files.

Storing sequences of commands

Suppose, for example, that in order to run a particular program, you usually type the commands:

```
PIP M:=*.DAT
SETKEYS KEYS.APP
APPLIC M:DATAFILE.DAT
```

If you were to put these into a file which you called TRANS.SUB, you could then use CP/M SUBMIT utility to get the same effect by just typing:

```
SUBMIT TRANS
```

The TRANS.SUB file is called a SUBMIT file. SUBMIT files are always just simple text files which you can create (and edit) by using the RPED text editor (see Section 2.4). They always have the filetype SUB.

Setting up a search path

The utility which sets up the search path is called SETDEF. It has two principal actions: extending the number of drives automatically searched for programs; and instructing CP/M to treat SUBMIT files as additional programs.

Searching additional discs

Normally, if the program you want to run is not on the default drive, you have to specify the drive it is on in your command line. You can make your command lines much simpler by giving CP/M a list of drives to search alongside the default drive. To do this, you use the SETDEF utility with the drives you want searched as its parameters. The order in which you list the drives will be the order in which they are searched for your programs.

For example:

```
SETDEF M:,A:
```
instructs CP/M to look for utilities first on Drive M and then on Drive A

If you want to put the default drive on this list, then you use an asterisk to represent the default drive. For example:

```
SETDEF M:,*
```
instructs CP/M to look for utilities first on Drive M and then on the default drive.

This use of an asterisk is special to SETDEF. It is not followed by a colon.

Including SUBMIT files in the search

The `ORDER` option of the SETDEF utility is used to extend the search to cover SUBMIT files you set up.

You can either specify that CP/M searches .SUB files first and then .COM files or vice versa. It executes the first file it finds with the given name.

The two possible SETDEF commands are:

```
SETDEF [ORDER=(SUB,COM)]
```

and

```
SETDEF [ORDER=(COM,SUB)]
```

Choose the first of these if you have called the SUBMIT file to run a particular program *program-name*.SUB. Otherwise typing the command *program-name* will just execute the program itself and not the other commands that you have put into your SUBMIT file.

Suppose you had made this choice. Then, the command line:

```
MYCOMM
```

would make CP/M search first for a file called MYCOMM.SUB and only if it cannot find it, would it carry on and search for a file called MYCOMM.COM.

If it finds MYCOMM.SUB, CP/M will execute the command as if you had typed:

```
SUBMIT MYCOMM
```

2.19 Switching which disc is read or written

You switch discs either by changing which drive is treated as the default drive or by physically changing the disc in a drive.

The default drive is changed by simply typing in *new-drive*:

For example, suppose you would like the Memory Disc to become your default drive. The command to type in is just:

```
M:
```

Most of the time when you want to change which disc is in Drive A or Drive B, all you need to do is release the old disc and put in the new one. But there are some circumstances in which the data on the new disc could be damaged if you don't tell CP/M that you have changed the disc in the drive immediately after putting the new disc in.

Always resetting the drive is therefore a good habit to get into.

The drive is reset by the control code, 'Control-C', which is generated either by pressing ALT+C or by pressing the STOP key.

2.20 Making use of 8000 series discs

If you have used one of the Amstrad 8000 series PCW machines (8256/8512) you may well be aware that the discs used in Drive A (the top drive on a PCW 8512) could only hold 180K of information. These are what are known as 180K discs. The discs that were used for Drive B of the 8512 and that are now used for a PCW9512 can hold about 4 times as much (720K) information. The PCW9512 can read both types of disc, however, it can only write to 720K discs.

A lot of commercially available software (wordprocessors, databases, spread-sheets, etc., etc.) that you can use on the PCW9512 will be advertised for use on the 8256/8512. Such software will work equally well on the PCW9512 – the only major area of difference will be the way in which the printer is handled – but it will almost certainly be supplied on the normal capacity (180K) discs that were used for the 8256. It should be possible run the program on such a disc (having first loaded CP/M). However, if during the execution of the program, it needs to write to the disc, because the disc is 180K and (as stated above) the PCW9512 cannot write to this type of disc, an error message will be produced. Whenever you see the...

```
Drive x: disc unsuitable, Retry, Ignore or Cancel ?
```

message, this almost certainly means that a program is trying to write to a 180K.

A second draw-back of continuing to use software supplied on 180K discs is that it is not possible for the PCW9512 to 'boot' from this kind of disc.

The term 'boot' is computer jargon but it is useful to know what it means because it is used quite widely. A 'bootable' disc is a disc that is of the correct type (720K) and contains the CP/M system file so that CP/M can be loaded from it. When you first switch the PCW9512 on, it tries to 'boot' (or load) CP/M from the disc in Drive A. If that disc is not the right type (a 180K disc) or does not contain the CP/M system file, the machine will just beep and the screen will remain blank.

Obviously, the best thing to do to prevent this kind of problem from arising would be to copy any files you have on 180K discs to 720K discs that the PCW9512 prefers to use.

A further (perhaps obvious) advantage of copying information from 180K discs to 720K discs is that they can hold 4 times the amount of information. So a program, originally designed to be used on the 8256, supplied on several discs that had to be swapped at regular intervals can now all be housed on one of the high capacity discs and will therefore prevent a lot of disc swapping.

As stated earlier in the manual, files can be copied using the CP/M PIP utility, however this can be a little daunting, especially when you want to read all the files on a disc (all users and system files). In order to simplify the process of copying information from 180K discs to high capacity discs a CP/M utilty called 8000COPY has been provided.

Hopefully the operation of this program should be self-explanatory. Just put your copy of the CP/M system disc into Drive A and type:

```
8000COPY
```

Before you can continue, you must have at least one disc already formatted (using DISCKIT) that you are going to copy the information on to. If you don't have a disc ready, type **N** when you are asked if you want to continue.

Now you will be asked if you will want to make the destination disc (the 720K disc you are copying on to) 'bootable' (ie. a disk that can be inserted when you first switch the PCW9512 on to load CP/M).

If you answer **Y** (for yes), the program will ask you to put your current CP/M start-up disc into Drive A. After inserting your copy of the CP/M start-up disc (which is probably the disc that is already in the drive at this point), just hit a key and the CP/M system file will be read in. If the disc you put in is of the wrong type or does not contain a system file you will be warned of this and given the opportunity to try with a different disc. Once the system file has been read it will later be written when the program starts to write files onto the 720K disc.

Once it has been read in or if you chose not to add the CP/M system file, the program will then start the actual file copying process.

If you have not added a second drive to your PCW9512, the copying process will be done in two stages. First all the files will be copied from a 180K disc to Drive M, then after changing to a 720K disc, all those files will be copied back to the disc in Drive A. Because Drive M is used, it has to be cleared first. If you have any files you want to keep stored on Drive M, you should copy them to a disk in drive A: before using 8000COPY.

If you have a second disk drive, the copying process will go straight from a 180K disc in Drive A to a 720K disc in Drive B. Drive M will not be affected.

If any errors are detected during the copying process an error message will appear, printed in inverse text. For some types of error you will be given the opportunity of pressing **R** to retry the operation, if this fails to fix the problem press **C** to cancel. At this point the program will stop.

If the disc you are copying onto becomes full or runs out of directory entries (i.e. more than 256 files), you are given the option of putting in a new disc with more space so the copying process can be continued from where it had got to.

Once the contents of one 180K disc have been copied onto the destination disc a message will appear asking if you have any more discs to copy onto it. It should be possible to put the contents of at least three discs onto a single 720K disc (depending on how full the 180K discs are). If you have no more discs to copy press **N** (for no) when asked if you have more discs – the program will then terminate.

If you have added the CP/M system to the new disc, you may also want to make it so that it does not just load CP/M, but also goes straight on to run a program. As described earlier in this manual the commands listed in a file called PROFILE.SUB will automatically be executed when CP/M is first loaded as long as the CP/M SUBMIT utility file (SUBMIT.COM) is also on the disc.

To copy SUBMIT.COM to the new disc type the following commands exactly:

(Insert your normal CP/M start-up disc in Drive A)

```
PIP
M:=SUBMIT.COM
```

(Insert the new disc you haved just copied files onto)

```
A:=M:SUBMIT.COM
```

When the asterisk (*) appears again, just press [RETURN] to return to CP/M.

The other file you need on the disc is a text file called PROFILE.SUB. What you put into this file depends on which programs you want to run each time CP/M is loaded from the disc. An example may make this clearer, suppose the new disc now contains all the elements of a spreadsheet program that uses that command:

```
SC2
```

to start running and that it is necessary to use the SETKEYS program before running it. What you need to put on the disc is a file called PROFILE.SUB that contains the following two lines:

```
SETKEYS KEYS.WP
SC2
```

Such a file can easily be created using the simple screen editor, RPED. Details of its operation can be found earlier in the manual. As long as the disc is a 720K disc, contains the CP/M system file, SUBMIT.COM and PROFILE.SUB it will be possible to switch the machine on, insert this disc and (in this case) the spread-sheet program will be loaded and run.

Chapter 3

Commercial software for the PCW9512

The advantage of running CP/M Plus on the PCW9512 is that you can then run a number of programs bought 'off the shelf' from your computer dealer. These could be computer games, accountants' spreadsheets or project planners.

Unfortunately, although CP/M software will run on the PCW9512, it won't always produce the results you expect. It may not control the screen or the printer properly, or it may not respond correctly to the keyboard.

If it is to work correctly, it will usually have to be 'installed' on the PCW9512.

This chapter provides a guide to avoiding the pitfalls and generally getting the best out of CP/M programs you buy. It will be useful to have this chapter handy when you buy software from an independent software dealer so that the dealer can check whether the software will work properly on the PCW9512.

3.1 Suitable software

Software for the PCW9512 must be:

- Written to run under the CP/M 2.2 or CP/M Plus (CP/M 3) operating systems
- Supplied on a 3inch Compact Floppy disc in either Amstrad CPC or PCW format

It is also advisable to choose, if possible, software that has been installed to run on the PCW9512 or the PCW8256/8512 computers. (The only major area of difference between software set up for the 9512 and that set up for the 8256/8512 will be the way in which the printer is handled.)

Your dealer will be able to tell you whether a suitable version of the software you want to use does exist. If the software is available in the right format but has not been installed on the PCW9512, you (or your dealer) will need to modify the program so that it will work correctly on your machine. This is a straightforward task but it may require detailed background knowledge.

If the program was written specifically for another computer, it may not be possible to modify it without specialised help. Check with your dealer that this is not the case!

The process of modifying the program is called installing and it is covered in Section 3.4 of this chapter.

3.2 First steps

Whether your software is ready to run on the PCW9512 or whether it has to be installed first, it is wise to start by making a copy of the software discs you have just bought. That way you can keep the originals as the Master Copy, safely stored away in case of accidents.

A good move before you get involved in copying is to open the Write Protect Holes on your system disc and the discs you intend to copy so that you cannot spoil them by accidentally writing to them. So do this before you go any further. There is a diagram showing the position of the Write Protect Holes and how they open and close Chapter 2 of Part I of this User Guide.

If the programs are supplied on a 'High-capacity Double-track' CF2 disc, then you can use DISCKIT to copy your disc onto a new blank disc. If, however, the supplied disc was originally intended to be used on either the CPC computers or the PCW8256/8512, it will almost certainly be supplied on a 'Normal-capacity Single-track' disc and you will have to format a new 9512 disc and then copy all the files on the supplied disc to your new disc.

If the programs are supplied set up for a PCW8256/8512 in such a way that you just have to switch on and insert the disc (ie. as a 'bootable' system), then you must replace the file called J10CPM3.EMS (or a name similar to this) by a copy of the file called J30CPM3.EMS (or similar) on your PCW9512 CP/M Start-up disc.

All these file transfers can be done by using the PIP utility (as described in Section 2.3) but this can prove a little complex, particularly where you have both ordinary 'Directory' files and System files on the disc. What we suggest you use instead is the special 8000COPY utility, provided on your CP/M Start-up disc. This is described in detail in Chapter 5. Note that you can get about four sides of a CPC or PCW8256 format disc onto a PCW9512 disc.

You are now ready to go on to either run the software or to install it.

3.3 Running ready installed software

The next step is to organise your working discs to make the software easy to run.

There are essentially two approaches to running an applications program. You can:

Either:

Load the CP/M operating system (and any utilities you expect to need) from your CP/M Start-up disc. Then replace this disc with the one holding the copy of the software and type the command(s) you need to run your applications program

Or:

Create a special Start-up disc that holds the following software:

- a copy of the file containing the CP/M operating system (which is called J30CPM3.EMS or a name that is similar to this)
- a copy of your application program
- a copy of any CP/M utilities that you will need, for example to erase old data files or copy files from one disc to another after you have finished using your program, and
- a PROFILE.SUB file that copies these utilities into the Memory Disc, and loads and runs your application program together with the file SUBMIT.COM which you will need to run the PROFILE.SUB.

We describe how to set up such a disc below.

The second of these options is only possible if all these programs can fit on the same disc.

Another thing to pay attention to is where you are going to store any data that the program generates. You can either plan to store this on the same disc as the program (if there is enough room) or use a special disc just for data. If you take the second option, either use a disc that has already been formatted or format a new blank disc.

You can now run the software by loading CP/M and then running your program, following the instructions in the program's own instruction manual/user guide. The final piece of advice is to keep duplicate copies of all your important data files: the quick and simple way of doing this is to copy the whole disc, using DISCKIT.

IMPORTANT: If the discs you want to use are set-up to 'boot' a PCW8256/9512, you must copy the files to a new disc and replace the J10CPM3.EMS file by J30CPM3.EMS as described in Session 3.2. These discs cannot be used to boot your PCW9512.

Creating an Application Start-up disc

If your application program is supplied on a PCW9512 format disc, then the way to create such a disc for yourself is to use the DISCKIT utility to make a copy of this disc on a fresh disc (see Section 2.2) and then use PIP with the [O] option to copy from your CP/M Start-up disc the file containing the CP/M operating system, the current PROFILE.SUB file and any CP/M utilities you want to this disc. (Using the [O] option is not essential but it is advised, whenever you want to copy program files. See the description of the PIP utility in Chapter 5 for details.)

If your application program is supplied on a PCW8256 or CPC format disc or a CPC format disc, use the 8000COPY program from the CP/M Start-up disc to create a copy on PCW9512 discs (See Section 2.20 for details).

Either of these routes gives you a disc holding all the programs and data files you need. All that remains to do is to set up the PROFILE.SUB file so that immediately after loading, CP/M automatically copies all the CP/M utilities from this disc to Drive M, makes these utilities available and finally loads and runs your application program.

The precise details will depend on the software you want to run in this way, but essentially, what you have to do is edit PROFILE.SUB so that it ends with the command lines you would normally type to run the application.

Suppose, for example, that to run your program you normally type the commands:

```
SETKEYS KEYS.APP
APPLIC B:DATAFILE
```

and when you have finished using the APPLIC program, you return the keyboard to normal with the command:

```
CPMKEYS
```

(What these 'KEYS' commands do is explained in Appendix I.)

To make all this happen for you, you might edit the supplied PROFILE.SUB file (using RPED, say) and add these command lines to the end of this file, giving you the new PROFILE.SUB file:

```
SETDEF M:,* [ORDER=(SUB,COM),TEMPORARY=M:]
DAISY A4 BOTTOM 64
PIP
< M:=PIP.COM
< M:=SUBMIT.COM
< M:=SET.COM
< M:=DIR.COM
<
SETKEYS KEYS.APP
APPLIC B:DATAFILE
CPMKEYS
```

Using a Start-up disc with such a PROFILE.SUB on it is sometimes known as Turnkey Operation because you just turn the computer on and the software runs. It is particularly useful if you want other people, who may not understand CP/M, to use the software you have bought. You can then just tell them to turn the PCW9512 on, put in the disc, press the Space bar and follow the instructions both on the screen and in the program's own instruction manual/user guide.

3.4 Installing the software

This section advises you on how to go about installing software. If your software comes ready installed, this section should be ignored.

The first thing to find out is whether the application you would like to install on your PCW9512 was written specifically for another computer or for a range of computers. If it was written specifically for another computer, you will probably need specialised help.

If it was written for a range of computers, there will be a program (either with the software or as a special part of it) that is designed to help you install the application. The job of this installation program is to set parameters within the main program according to information you supply about how the PCW9512 works.

The relevant information about the PCW9512 is tabulated at the end of this chapter. However, the form in which the details will be requested varies from software package to software package, and so there is no guarantee that you will be able to use this information directly.

If you are lucky, how the installation program works will be explained in the documentation supplied with the software. Your best source of advice is your dealer who will know both the PCW9512 and the software you propose to install.

3.4.1 Running the installation program

The installation program will typically request information from you through a sequence of questions on the screen.

Software suppliers typically include a fairly detailed set of instructions with any software package that needs installing, and we strongly advise you to read this.

The questions that appear on the screen mainly refer to the codes generated by keystrokes at the keyboard, the codes required by the screen in order to move the cursor around or display information, and the form in which data needs to be presented to the printer. Many of these codes have been standardised over the years: it is just the ones that can vary from machine to machine that need to be specified.

The installation program is likely to start by asking you what kind of monitor and what kind of printer you have. It may well do this by offering you a list of possibilities.

If `Zenith Z19/Z29` is on its list of monitors and/or `Diablo 630` is on its list of printers, select these. The PCW9512's screen and printer are sufficiently like these to allow most programs to run properly.

Other programs may require you to specify the parameters more precisely. You will need to draw the answers to specific questions one by one from the tables on the following pages.

However, an option you can take in matching the keyboard to the program is to use the SETKEYS utility to redefine the codes the keyboard produces. The way to do this is described in Appendix I. This can be simpler than giving the installation program details of the codes produced at present, especially when your software is one of many to use a certain set of codes.

In particular, a number of programs use the similar set to both the WordStar word processing package and the SuperCalc accounts program. We have put a key definition file, KEYS.WP, on the CP/M Start-up disc that can be used with the SETKEYS utility to set up the PCW9512 keyboard to suit these programs – and a special program called CPMKEYS that can be used to set the keyboard up in the standard way after you have finished using this program. (See Appendix I.)

The installation program of the software package should only ever need to be run once. The program ensures that the special parameters are set to the right values throughout the software package. However, if you do use SETKEYS, this has to be run each time.

3.5 PCW9512 parameters

Keyboard operations

	Hex value	Decimal value	Key number
Cursor up	#1F	31	14
Cursor down	#1E	30	79
Cursor right	#06	6	6
Cursor left	#01	1	15
Delete character under cursor	#07	7	16
Delete last character	#7F	127	72
Escape (Exit)	#1B	27	8
Return	#0D	13	18
Space	#20	32	47
Tab	#09	9	68

Further details of the keyboard control codes are given in Appendix I.

Printer operations

	Hex value	Decimal value
Backspace	#08	8
Carriage return	#0D	13
Line feed	#0A	10
Form feed	#0C	12
Set bold	#1B #57	27 87
Cancel bold	#1B #26	27 38
Set underline	#1B #45	27 69
Cancel underline	#1B #52	27 82
Set superscript	#1B #44	27 68
Cancel superscript	#1B #55	27 85
Set subscript	#1B #55	27 85
Cancel subscript	#1B #44	27 68

Further details of the printer control codes are given in Appendix II.

Screen operations

	Hex value	Decimal value
Sound bleeper (Bell)	#07	7
Move cursor back one space	#1B #44	27 68
Move cursor forward one position	#1B #43	27 67
Move cursor down one line	#1B #42	27 66
Move cursor up one line	#1B #41	27 65
Carriage return	#0D	13
Line feed	#0A	10
Delete character under the cursor	#1B #43	27 78
Delete character to left of cursor	#08	8
Clear the screen	#1B #45	27 69
Clear all the screen up to the cursor	#1B #64	27 100
Clear all the screen after the cursor	#1B #4A	27 74
Clear the line to left of cursor	#1B #6F	27 111
Clear the line to right of cursor	#1B #4B	27 75
Move the cursor to Home position	#1B #48	27 72
Move cursor to left hand edge of screen	#0D	13
Move cursor to row *r*, column *c*	#1B #59 *r c*	27 89 *r c*
	(*r* and *c* are actual values plus #20 (hex), 32 (decimal)	
Insert a line	#1B #4C	27 76
Delete a line	#1B #4D	27 77
Enter inverse video	#1B #7	27 112
Leave inverse video	#1B #71	27 113
Enter underline mode	#1B #72	27 114
Leave underline mode	#1B #75	27 117

Further details of the screen control codes are given in Appendix III.

Chapter 4

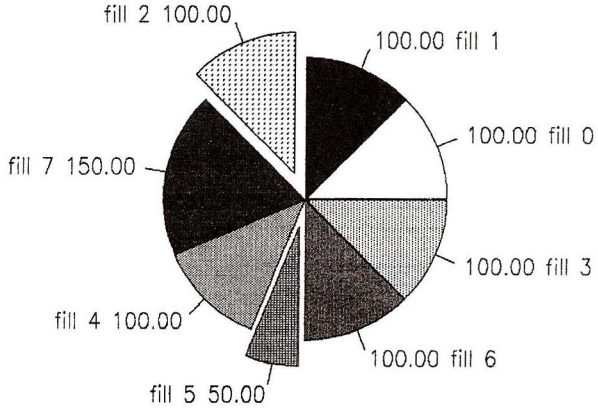
Graphics on the PCW9512

One of the benefits of having the CP/M operating system on the PCW9512 is that PCW9512 users can run programs with graphical output – everything from simple data plots to quite complex pictures – through the Graphics System Extension to CP/M. And if you attach a dot-matrix printer or a plotter to your PCW, you can produce hard copies of these pictures as well.

GSX, as this additional system software is called, converts all the graphics instructions produced by a CP/M program into instructions understood by whatever 'Output Devices' (ie. which particular monitor, printer and/or plotter) you have.

This means that you will be able to run programs that create bar charts and pie charts, even if these have been written for other CP/M computers.

GSX doesn't itself have the power to draw such pictures for you: for that you need dedicated graphics application software. The example below was drawn using Digital Research's DR Graph program.



You can also develop your own BASIC programs to draw graphs and pictures on the PCW9512. Details of these are beyond the scope of this introduction but you will find the information you need in *'Mallard BASIC: Introduction and Reference'* (published by Locomotive Software and marketed by AMSTRAD).

The chief advantage of GSX is that it is device independent. Despite all the differences in the way individual monitors, printers and plotters draw lines, fill in areas and add text to graphics, the application program shouldn't need to be altered if you choose to use a plotter rather than a printer, say.

Moreover, you will get essentially identical output on your printer as you would on your monitor, simply by telling the program to send the data to your printer.

GSX can't, of course, operate every printer or plotter that has ever been built, nor can it be used by every program producing graphical output. The software has to have been designed to run under CP/M with the GSX extension, and the data about driving the printer/plotter must exist in the right form to be interpreted by GSX. This data is supplied in special files known as Device Drivers, one for each output device.

It must also be remembered that not all output devices have the same facilities. For example, a number of monitors have no way of filling in an area outlined on the screen. In such cases, the program will still run but the full graphic effect will not be produced. For example, the outlined area will be left unfilled.

GSX is a standard understood and designed for by a number of computer manufacturers and programmers. You will therefore be able to choose from a wide variety of output devices and applications programs.

4.1 The PCW9512's GSX software

Most of the system software needed to run GSX programs on the PCW9512 is on the CP/M Start-up disc.

This software comprises:

GSX.SYS	the file holding the GSX extension itself.
ASSIGN.SYS	the file that records what output devices you have and the Logical Device Numbers by which the program refers to them.
GENGRAF.COM	a utility that is used to ensure that GSX will be loaded automatically at the same time as the program needing it.
DDSCREEN.PRL	the device driver file containing the relevant information about the PCW9512's monitor.

DDFXLR8.PRL	the device driver file containing the relevant information to use an Epson FX-80 compatible printer to produce low resolution graphics.
DDFXHR8.PRL	an alternative device driver file to use to make an Epson FX-80 compatible printer produce high resolution graphics.
DDHP7470.PRL	The device driver file containing the information that will be needed if you add a HP Compatible pen plotter to your system.

You may need to add further GSX software as you acquire new peripherals for your PCW9512.

GSX needs these files to run on the PCW9512, so take care not to delete them.

4.2 GSX programs for the PCW9512

There are a number of commercial software packages that produce graphs and so on from data you enter. You will be able to run any of these programs provided that they have been developed to run under CP/M Plus or CP/M 3 with the GSX extension and that they are available on Amstrad format 3inch discs. If the programs send their output to a printer or a plotter, you will also need to attach a suitable dot-matrix printer (such as the Amstrad DMP3000) or plotter to your PCW.

Although it is possible to generate such graphics through your own programs, you will need to know GSX's controls and calling sequences to do this. You will need to refer to Digital Research's: 'GSX Handbook' for these as they are outside the scope this manual. (**Note:** This book is highly technical and is not recommended for beginners!)

Any software you buy will either already be in the correct version for running on the PCW9512, or come with an installation program to help you set the parameters needed to allow the software to run on your computer.

A bonus in installing a GSX program over installing any other CP/M program is that the device drivers already hold much of the information needed. The amount of data you have to supply is therefore much reduced.

The application's manual should provide all the information you need to run it on the PCW9512, especially if used along with Chapter 3 of this manual which describes the installation of application software. If not, consult your dealer.

The discs you will use to run any graphics software won't be the original software discs but copies to which you have added the necessary GSX system files from the CP/M Start-up disc. You should store away the originals as your Master copies.

To create these copies, first use DISCKIT to format as many blank discs as you need. Then use PIP or 8000COPY to copy the files from the discs you have bought and to add copies of GSX.SYS, ASSIGN.SYS, GENGRAF.COM and whichever device driver files you require.

The manual with the application software will tell you how many and what types of peripherals it is designed to send its output to.

Commercial GSX software will almost certainly be set up to include an extra program, the GSX Loader, which adds the GSX extension to the operating system when loading the software into memory.

You can tell that the Loader is included if the screen immediately after you have loaded the software looks like this:

```
A>draw
-------------------------------------------------
GSX-80 1.1  01 Oct 83    Serial No 8015-3000-654321
Copyright (C) 1983
Digital Research, Inc.          All Rights Reserved
-------------------------------------------------
```

If this screen doesn't appear, you need to add the Loader to the application.

The utility that will do this is GENGRAF, which you earlier copied onto your working discs. You run this utility with the application's filename as its parameter.

For example, suppose the application program is called APPLIC.COM. Put the disc with both GENGRAF.COM and APPLIC.COM in the drive then type:

```
GENGRAF APPLIC
```

GENGRAF attaches the Loader permanently to the application program – so you won't need to run it again when you want to use this program.

With the GSX Loader in place, all you need to do to start running the program is to type in its filename after a system prompt. Any additional information it requires from you will be explained in the application's manual.

4.3 Setting up the system for your printer/plotter

The PCW9512 can be used with a wide range of printers and plotters, which can either be plugged directly into the PCW or connected via an Amstrad CPS8256 Serial/Parallel Interface attached to the PCW's Expansion port.

The problem when you want to use a particular printer or plotter for graphics work is whether an appropriate device driver exists. Your dealer should be able to advise you on this.

If you have an Epson FX-80 compatible dot-matrix printer, then you should be able to use either of the FX printer drivers supplied on the CP/M Start-up disc. The DDFXLR8.PRL driver will give you low-resolution graphics; the DDFXHR8.PRL driver will give you high-resolution output.

If your plotter is described as 'HP Compatible', you should be able to use the DDHP7470.PRL plotter driver.

Once you have the device driver you want, you need to copy this file onto your GSX disc, using the PIP utility (see Section 2.3).

You will also need to modify the ASSIGN.SYS file. This is a list of the devices available to the program and the names of their device driver files.

The devices are referred to both in the application program and in the ASSIGN.SYS file by Logical Device Numbers. These are two digit numbers, monitors usually having numbers between 01 and 10, plotters between 11 and 20 and printers between 21 and 30.

The convention is that if you only have one of any type of device, then its logical device number is the lowest number in its related band. Thus, as you only have one monitor, its logical device number will be 01. The maximum number of output devices that can be referenced via the ASSIGN.SYS file at any time is five.

To see the current form of the ASSIGN.SYS file, type `TYPE ASSIGN.SYS` after a system prompt. You should see something like this:

```
21 A:DDFXLR8????
01 A:DDSCREEN
```

If these aren't the device drivers you want, then you must change ASSIGN.SYS. In particular, if you want to use a plotter, you will have to insert a line like this:

`11 A:`*plotter-driver*

We suggest you use `RPED` to make these changes (see Section 2.6).

The position in which you insert any new line in the ASSIGN.SYS file will depend on the size of its device driver file. GSX needs the largest file to be named first.

The SIZE option of the DIR command (see Section 2.8) will establish which of the three files DDSCREEN.PRL, DDFXLR8.PRL and DDHP7470.PRL (or whatever) is the largest. Typically, the printer file will be the largest and the monitor file the smallest.

You will probably decide to insert the new line between the current two lines in the ASSIGN.SYS file.

For the application to use the plotter instead of the printer, it needs to be told to use logical device 11 instead of 21.

Many applications help you do this (see the application's manual) but if it doesn't, go back to the ASSIGN.SYS file, delete the reference to the printer driver and change the plotter's logical device number to 21. The choice of numbers was merely according to a convention which doesn't have to be adhered to.

Further information about device drivers and the ASSIGN.SYS file may be found in Digital Research's 'GSX Handbook'.

4.4 Errors associated with GSX programs

Message	Action
d:*filename*.PRL not found	The device driver listed in ASSIGN.SYS cannot be found on the specified drive. Check that you specified the right drive and that the filenames match. If all else fails, recopy the device driver onto your GSX disc.
d:*filename*.PRL empty	The device driver file has been found but there is no data in it. Delete the empty file and recopy the device driver onto your GSX disc.
d:*filename*.PRL contains absolute segment	This is probably the result of a corrupted driver file. Recopy the device driver onto your GSX disc.
d:*filename*.PRL close error	You probably changed discs while a file was open. Insert the correct disc and try again.
d:*filename*.PRL load error	You probably haven't got the largest device driver file listed first. Check and redo.

4.5 Technical information

The following table gives details of types of the graphical output produced by the supplied device drivers.

You will only need this information if you write your own graphics programs or to help your dealer establish whether the graphics program you want to buy will work fully on your PCW9512.

	Monitor	**Printer Low res.**	**Printer High res.**	**Plotter**
Device driver	DDSCREEN	DDFXLR8	DDFXHR8	DDHP7470
Resolution	720x248	480x672	960x1368	10300x7560
Line styles	1 solid	1 solid	1 solid	1 solid
	2 short dash	2 short dash	2 short dash	2 dot
	3 dotted	3 dotted	3 dotted	3 short dash
	4 dash dot	4 dash dot	4 dash dot	4 long dash
	5 long dash	5 long dash	5 long dash	5 dash dot
	6 dash dot dot	6 dash dot dot	6 dash dot dot	6 dash dot dot
				7dash s-dash s-dash
Number of line sizes	1	12	12	1
Marker types	1 .	1 .	1 .	1 .
	2 +	2 +	2 +	2 +
	3 *	3 *	3 *	3 *
	4 o	4 o	4 o	4 o
	5 x	5 x	5 x	5 x
Number of text sizes	1	12	12	Continuous scaling
Text Directions	0°	90° intervals	90° intervals	1° intervals
Fill area	1	 or 		None
	2	 or 		
	3	 or 		
	4	 or 		
	5	 or 		
	6	 or 		
Generalised drawing primitive	Bar fill	Bar fill	Bar fill	None
Escapes	Yes – except no tablet no hardcopy	Inquire addressable character cells		
Input	Yes	No	No	No

Chapter 5

The CP/M Plus built-in commands and utilities

The following pages contain descriptions and explanations of the CP/M Plus built-in commands and transient utility programs on the PCW9512, together with examples of their use.

The built-in commands are an integral part of the CP/M Plus operating system and are thus automatically loaded from the CP/M Start-up disc when CP/M is loaded. The utilities are also held on the Start-up disc but they are not automatically loaded into memory. They have to be read into memory each time before they are used.

The built-in commands have limited power and four of them, DIR, ERASE, RENAME and TYPE, have an associated utility of the same name to give them their full functionality. In particular, the utility is needed if any of the command's options are to be used.

The index on the following page lists the commands and utilities, together with the location of the associated utility on disc. The descriptions of the individual commands include references to where else they are discussed.

More details of the CP/M commands and utilities are given in the Heinemann-Newtech publication: 'A Guide to CP/M Plus'.

Some of the utilities may only be of use to experienced CP/M programmers. In those cases, the description here is intended only as a brief introduction to the utility. For information on these utilities, you should turn to 'A Guide to CP/M Plus'.

Throughout this chapter it is assumed that the Start-up disc on which the required utility is stored is in the default drive. If this is not the case, the name of the utility should be preceded by `A:`, `B:` or `M:` as appropriate.

Conventions

This chapter makes great use of place-holders to describe the syntax of the various commands. This means that where you should put the the actual name of a file or a drive, we have put a brief description of the parameter that is required.

For example, we have put *'drive:'* where you should put 'A:', 'B:' or 'M:' (or omitted if the required drive is the default drive). *'filespec'* is used as shorthand for *'drive:filename.filetype'* and should be replaced by as much of the required file's file specification as is needed to specify the file.

In addition, optional parts of any instruction are surrounded by slanting square brackets: these parts may be omitted altogether, included just once or included as many times as appropriate. Attention must be paid to separating like items by single spaces or commas as specified in the instruction.

For example:

DIR *[[option[, option]]]*

is used to represent any of

DIR [*option*]

DIR [*option, option*]

DIR [*option, option, option*]

...

or simply

DIR

Anything not printed in italic or enclosed between slanting square brackets must be typed exactly as shown.

The examples given with each command or utility should clear up any uncertainity in how any particular place-holder should be interpreted.

Another convention used here is to represent CP/M's control codes as *'Control-character'* in line with other guides to CP/M. The codes have usually been associated with one of the special function keys (see the table in Appendix I, page 538) but they can always be accessed by pressing ALT+*character*.

Getting Help

Brief technical information about the CP/M commands and utilities can be displayed on the screen by using the HELP.COM utility supplied on the CP/M Start-up disc. To use this facility, insert the CP/M Start-up disc in Drive A and type the command:

```
A:HELP
```

You then see a list of of the topics on which information is available. These are:

```
8000COPY    COMMANDS    CNTRLCHARS  COPYSYS     CPMKEYS     DAISY
DATE        DEVICE      DIR         DISCKIT     DUMP        ED
ERASE       FILE-LIST   FILESPEC    GENCOM      GET         GSX
HELP        HEXCOM      INITDIR     LANGUAGE    LIB         LINK
MAC         MATRIX      PALETTE     PAPER       PATCH       PIP (COPY)
PRINTER     PUT         RENAME      RMAC        RPED        SAVE
SET         SET24X80    SETDEF      SETKEYS     SETLST      SETSIO
SHOW        SID         SUBMIT      TIMEOUT     TYPE        USER
XREF
```

It also gives you a new prompt – `HELP>` – and leaves the cursor after this prompt. To see information on one of the above topics, simply type its name after the prompt and press RETURN. HELP then displays a page-full of information on this topic, finishing with another `HELP>` prompt.

For example, to see information on the DEVICE command, you would type:

`DEVICE` RETURN

Some of the topics have subtopics such as EXAMPLES and OPTIONS associated with them. These can be accessed from the main information by typing a full stop followed by the name of the subtopic at the `HELP>` prompt. However, if you just want to see the subsidiary information on a particular topic, you can display this without first displaying the main information by typing the name of the topic followed by a space and then the name of the subtopic.

For example, to see information on the Options associated with the DEVICE command, you would type:

`DEVICE OPTIONS` RETURN

The `COMMANDS CONVENTIONS` topic gives details of the conventions used in the rest of the text.

System Housekeeping

Name	Location	Description	Page
8000COPY	8000COPY.COM	Copy files from 180k 8256/8512 discs to 720k 9512 discs	440
DIR	Built-in + DIR.COM	Display details of Directory files	448
DIRSYS	Built-in	Display details of System files	450
DISCKIT	DISCKIT.COM	Copy, format or verify a disc	451
ERASE	Built-in + ERASE.COM	Delete files	458
GET	GET.COM	Specify source of Console input	459
INITDIR	INITDIR.COM	Format directory to allow date and time stamping	461
PIP	PIP.COM	Copy files	469
PUT	PUT.COM	Specify destination of Screen and Printer output	473
RENAME	Built-in + RENAME.COM	Rename files	475
SET	SET.COM	Set file and drive attributes	477
SETDEF	SETDEF.COM	Set disc and filetype search order	479
SHOW	SHOW.COM	Show information about drives	485
SUBMIT	SUBMIT.COM	Execute commands in a Batch file	486
TYPE	Built-in + TYPE.COM	Display the contents of a file	488
USER	Built-in	Set the Current User Number	489

Setting up the hardware

Name	Location	Description	
CPMKEYS	CPMKEYS.COM	Reset the keyboard to its standard definition	441
DAISY	DAISY.COM	Reset the printer as a 630-compatible and set printer parameters	441
DATE	DATE.COM	Set the date and time of day	445
DEVICE	DEVICE.COM	Assign CP/M's logical devices	445
LANGUAGE	LANGUAGE.COM	Change national character set	462
MATRIX	MATRIX.COM	Reset the printer as an Epson-compatible and set printer parameters	463
PALETTE	PALETTE.COM	Set/Clear Reverse Video display	466
PAPER	PAPER.COM	Set paper parameters	466
SETKEYS	SETKEYS.COM	Configure the keyboard	480
SETLST	SETLST.COM	Initialise the printer	482
SETSIO	SETSIO.COM	Set up the Serial Interface	483
SET24X80	SET24X80.COM	Set the screen size	484

Advanced programming tools

Name	Location	Description	Page
DUMP	DUMP.COM	Display the contents of a file in hex	454
ED	ED.COM	Edit a text file	455
GENCOM	GENCOM.COM	Attach RSXs to a command file	459
HEXCOM	HEXCOM.COM	Generate a command file	461
LIB	LIB.COM	Create a library of object modules	462
LINK	LINK.COM	Combine object modules into a command file	463
MAC	MAC.COM	Macro assembler	463
PATCH	PATCH.COM	Update file header after patching	468
RMAC	RMAC.COM	Relocatable Macro assembler	476
SAVE	SAVE.COM	Save memory contents	476
SID	SID.COM	Symbolic Instruction Debugger	486
TIMEOUT	TIMEOUT.COM	Enable/disable device timeouts	487
XREF	XREF.COM	Produce cross-reference summary	489

8000COPY Utility

Copies files from one or more 180k PCW8256/8512 discs to a new 720k PCW9512 disc. If required, the 9512 disc will be made 'bootable'.

The utility is invoked by typing `8000COPY`. The operation of this program should be self-explanatory.

Before you can continue, you must have at least one disc already formatted (using DISCKIT) that you are going to copy the information on to. If you don't have a disc ready press **N** when you are asked if you want to continue.

You are then asked if you will want to make the destination disc (the 720K disc you are copying on to) 'bootable'. If you answer **Y** (for yes), the program will ask you to put your CP/M Start-up disc into Drive A. Press a key and the CP/M system file will be read in.

On a single-drive system, copying is done in two stages. First all the files are copied from a 180K disc to Drive M, then after changing to a 720K disc, all those files will be copied back to the disc in Drive A. On a two-drive system, the copying process is direct from the 180K disc in Drive A to a 720K disc in Drive B.

If any errors are detected during the copying process, an error message will appear. For some types of error you will be given the opportunity of pressing **R** to retry the operation, if this fails to fix the problem press **C** to cancel. At this point the program will stop.

If the disc you are copying onto becomes full or runs out of directory entries (ie. more than 256 files), you are given the option of putting in a new disc with more space so the copying process can be continued from where it had got to.

Once the contents of one 180K disc have been copied onto the destination disc a message will appear asking if you have any more you want to copy onto it. If you have no more discs to copy press **N** (for no) when asked if you have more discs – the program will then terminate.

If you have added the CP/M system to the new disc, you may also want to make it so that it does not just load CP/M, but also goes straight on to run a program. As described earlier in this manual the commands listed in a file called PROFILE.SUB will automatically be executed when CP/M is first loaded as long as the CP/M SUBMIT utility file (SUBMIT.COM) is also on the disc.

This utility is described in detail in Section 2.20.

CPMKEYS Utility

Resets the standard set of CP/M keyboard definitions, 'undoing' any changes that you have made by using the SETKEYS utility.

The utility is invoked by typing CPMKEYS. The keyboard is then re-defined. No messages are displayed.

Using this utility is described in Appendix I, Section I.3.

DAISY Utility

Resets the built-in printer to work as a 630-compatible printer and sets a number of printer parameters. The parameters set include the size of paper, whether the paper is single sheet or continuous and the number of lines per inch you want to use. The values that you set become the new default settings. (See Appendix II.)

`DAISY` resets the printer to work as a 630-compatible printer. The following printer parameters are set to their current default values:

- Line Pitch
- Form Length
- Top Margin
- Bottom Margin
- Type of stationery (Single sheet or Continuous)
- Response to Paper Sensor

`DAISY` *option[, option]*

resets the printer to work as a 630-compatible printer and sets one or more of the printer parameters. The values that you set become the new default values. The options are separated by commas or single spaces and may be given in any order. Some of the options affect the settings of other parameters, unless these are set explicitly in the same command line.

The options are used to generate printer control codes which are sent to the printer. As the commands are obeyed, they are reported on the screen.

The options are:

n sets the parameters for continuous stationery with a form length of *n* inches. These are:

Form Length: *n* inches
Line Pitch: 6 lines per inch
Top Margin: Line 1
Bottom Margin: Last line
Continuous stationery
Paper Sensor: ON

n must be in the range 1...15.

A4 sets the parameters for A4 paper. These are:

Form Length: 70 lines
Line Pitch: 6 lines per inch
Top Margin: Line 1
Bottom Margin: Line 70
Single Sheet stationery
Paper Sensor: OFF

A5 sets the parameters for A5 paper. These are:

Form Length: 50 lines
Line Pitch: 6 lines per inch
Top Margin: Line 1
Bottom Margin: Line 50
Single Sheet stationery
Paper Sensor: OFF

AUTO LF *state* sets whether Carriage Returns are automatically followed by a Line Feed. *state* can be ON or OFF. AUTO LF can be shortened to AL

BOTTOM MARGIN *n*
specifies the number of the last line on the page on which text will be printed. *n* must be in the range 1...99. If the Line Pitch is not set explicitly in the same DAISY command, then the line pitch is set to six lines per inch both for subsequent use and for the purposes of the current command. BOTTOM MARGIN can be shortened to B

CONTINUOUS selects the use of continuous stationary. If Paper Sensor is not set explicitly in the same DAISY command, it is set to ON. CONTINUOUS can be shortened to C

EXTRA WHEEL *type*
: sets the printer for a print wheel with the alternative set of characters. *type* can be either FIXED or PS. Details of the alternative set of characters must have already been loaded into the printer. See Appendix II, Section II.3.6 for further details. EXTRA WHEEL can be shortened to E

FORM LENGTH *n*
: sets the form length (page length). *n* is the length given as the equivalent number of lines and must be in the range 1...99. If the Line Pitch is not set explicitly in the same DAISY command, then it is set to six lines per inch both for subsequent use and for the purposes of the current command. If the command doesn't explicitly set both the Top and the Bottom Margin, they are set to the first and last lines. FORM LENGTH can be shortened to F

IMPRESSION *strength*
: sets the print strength. *strength* can be LOW, MEDIUM or HIGH. IMPRESSION can be shortened to I; LOW to L; MEDIUM to M; and HIGH to H

LANGUAGE *n*
: sets the national Character set that is to be used, affecting how certain character codes are interpreted. *n* is the number used to identify the national Character set (*n*=0...8). See Appendix II, Section II.6 for details. LANGUAGE can be shortened to L

LINE PITCH *n*
: sets the line pitch (number of lines printed per inch). *n* may be either 6 or 8. LINE PITCH can be shortened to LP

PAPER SENSOR *state*
: sets whether signals from the Paper Sensor stop the printer. *state* can be either ON or OFF. PAPER SENSOR can be shortened to P

PITCH *n*
: sets the character pitch (number of characters per inch). *n* may be 10, 12, 15, 17 or PS. PITCH can be shortened to P

RIBBON *type*
: sets the printer for the type of ribbon being used. *type* may be SINGLE, MULTI or CLOTH. RIBBON can be shortened to R; SINGLE to S; MULTI to M; and CLOTH to C

SINGLE SHEET
: selects use of single sheet stationery. If Paper Sensor is not set explicitly in the same DAISY command, it is set to OFF. SINGLE SHEET can be shortened to SS

`STANDARD WHEEL` *type*
: sets the printer for a print wheel with the standard set of characters. *type* can be either `FIXED` or `PS`. `STANDARD WHEEL` can be shortened to `SW`

`TOP MARGIN` *n*
: specifies the number of the first line on the page on which text will be printed. *n* must be in the range 1...99. If the Line Pitch is not set explicitly in the same DAISY command, then the line pitch is set to six lines per inch both for subsequent use and for the purposes of the current command. `TOP MARGIN` can be shortened to `T`

Examples

`A>DAISY FORM LENGTH 70`
: resets the printer; then sets the Line Pitch to 6 lines per inch, the Form Length to 70 lines in this pitch, and the Top and Bottom Margins to the first and last lines of the page. These values then become the default settings.

`A>DAISY F 70, LP 8`
: resets the printer; then sets the Line Pitch to 8 lines per inch, the Form Length to 70 lines in this pitch and the Top and Bottom Margins to the first and last lines of the page. These values then become the default settings.

`A>DAISY A4`
: resets the printer; then sets the Line Pitch to 6 lines per inch and the Form Length to 70 lines in this pitch. The Top and Bottom Margins are set to the first and last lines of the page. The printer is set to expect Single Sheet stationery and the Paper Sensor is ignored. These settings then become the default settings.

`A>DAISY I HIGH, R C`
: resets the printer, setting the current default Line Pitch, Form Length, Top and Bottom Margins, Type of Stationery and Paper Sensor state; then sets the printer for a high Print Impression (Print strength) and for a Cloth Ribbon. These settings then become the default settings.

This utility is introduced in Section 2.12 ('Operating the printer').

DATE Utility

Sets and displays the date and the time of day.

`DATE` displays the current setting of the computer's clock. Unless set by the user at some time during the current computing session, the date will display the creation date of the CP/M and the time of day the number of hour, minutes and seconds since the start of the computing session.

`DATE` *MM/DD/YY hh:mm:ss*
sets the computer's clock. *MM* is the month represented by `01..12`; *DD* is the day represented by `01..31`; *YY* is the last two digits of the year, represented by `00..99`; *hh* is the hour, represented by `00..23`; *mm* is the number of minutes, represented by `00..59`; and *ss* is the number of seconds, represented by `00..59`. The system responds with `Strike any key to set time` and starts the clock at the given time when you press a key.

The clock settings are not supported when the PCW9512 is running the LocoScript software and so the use of the DATE utility is not recommended.

DEVICE Utility

Assigns the logical CP/M Plus devices to the physical devices (peripherals) attached to the PCW9512 and sets the associated communications parameters. It may also be used to display the current assignments of the logical devices, together with related information.

CP/M Plus supports the following five logical devices:

`CONIN:` console input (ie. the keyboard)

`CONOUT:` console output (ie. the monitor)

`AUXIN:` input side of an auxilliary device (eg. a communications interface)

`AUXOUT:` output side of an auxilliary device (eg. a communications interface)

`LST:` the printer

The physical devices that can appear in DEVICE commands depend on the details of the hardware configuration. The PCW9512 has the capability for supporting the following physical devices:

CRT	The keyboard and the monitor
LPT	The built-in printer
PAR	The built-in parallel printer port
SIO	The serial port on the Serial/Parallel Interface (if fitted)
CEN	The parallel port on the Serial/Parallel Interface (if fitted)

DEVICE NAMES
: lists the physical devices acceptable to the PCW9512, together with a summary of their basic characteristics, making a total of three elements in the list per device.

DEVICE VALUES
: lists the current logical device assignments.

DEVICE *physical-device*
: displays the characteristics of the named physical device.

DEVICE *logical-device*
: displays the current assignment of the named logical device.

DEVICE *logical-device=physical-device [[option[, option]]]*
: assigns the named logical device to the named physical device.

DEVICE *logical-device=physical-device1, physical-device2[, physical-deviceN]*
: sets the named logical device simultaneously to two or more physical devices.

DEVICE *logical-device*=NULL
: disconnects the named logical device from all physical devices.

DEVICE
: lists both the physical devices acceptable to the system (with their basic characteristics) as for DEVICE NAMES and the current assignments of the logical devices. It then prompts the user for new device assignments of the form *logical-device=physical-device*

DEVICE options

The options associated with the DEVICE utility are used to qualify individual physical devices. They generally apply only when a serial and/or parallel interface such as the Amstrad RS232C/Centronics Interface is fitted.

They should be listed between square brackets and separated by commas, after the physical device to which they apply. There must not be any space between the name of the device and the bracketed options.

With such an interface fitted, any listing of the physical devices fitted through a DEVICE command will include entries for SIO and CEN. In addition, AUXIN: and AUXOUT: will be automatically assigned to SIO when the machine is booted.

XON — activates the signalling procedure whereby the peripheral device notifies the computer whether it is ready to receive more data.

NOXON — results in the computer sending data to the peripheral device whether it is ready to receive it or not.

n — sets the rate at which data is sent to the peripheral device (the Baud Rate). The allowed values for *n* are:

50, 75, 110, 134.5, 150, 300, 600, 1200, 1800, 2400, 3600, 4800, 7200, 9600 and 19200.

Only some of these values may be appropriate to any particular device.

Examples

```
A>DEVICE

Physical Devices:
I=Input, O=Output, S=Serial, X=Xon-Xoff
CRT     NONE    IO  LPT     NONE    O  PAR     NONE    0

Current Assignments:
CONIN:    =         CRT
CONOUT:   =         CRT
AUXIN:    =         Null Device
AUXOUT:   =         Null Device
LST:      =         LPT

Enter new assignment or hit RETURN:
```

```
A>DEVICE LST:= PAR
```

assigns the parallel port as the logical printer port, so that all printer output will be sent to this port, rather than to the built-in printer.

```
A>DEVICE AUXIN:=NULL
```

disconnects the logical device AUXIN from all PCW9512 peripheral devices.

This utility is covered in Section 2.14.

DIR — Built-in command

Displays the names and associated details of non-system files accessible to the user through either the default or the specified drive.

`DIR` displays the names and filetypes of all such files on the disc in the default drive.

`DIR` *drive*: displays the names and filetypes of all such files on the disc in the specified drive.

`DIR` *filespec* is used to check whether the required file is on a particular disc.

`DIR` *filespec-including-wildcards*
is used to display files on the default or specified drive with similar names and/or filetypes. * matches with any number of characters in the same part of the file specification, whereas ? has to match with a character or a space in the same position.

All the above variants may be enhanced by the use of one or more of the DIR command options. However, to use these options the companion utility DIR.COM must be on the search path.

The options should be listed at the end of the command line, between square brackets and separated by commas or single spaces.

The options include:

`DRIVE=ALL` causing search and listing of all accessed drives

`EXCLUDE` giving the names of all files **except** those with the given file specification

`FULL` giving name, size (both in kbytes and number of 128byte records) and attributes of every file listed

`RO` or `RW` causing search and listing of just read-only files or just read-write files, respectively

`SIZE` giving name and size in kilobytes of every file listed

`USER=ALL` causing search and listing of all files on the disc in the specified drive, whatever user number they were created under

This time the files are listed in alphabetical order of filename.

If searching the directory fails to find any file meeting the given specification, the message `No File` is displayed.

If system files exist matching the given specification and you are not using any of the search options, the message `SYSTEM FILE(S) EXIST` is displayed. If you use one or more of the search options, system files are automatically listed.

If the listing fills more than one screen, the system pauses when it gets to the bottom of the screen. Press RETURN to see the remainder of the listing.

Examples

```
A>DIR
A: PLOT  TX  : PRIME TX  : PRINT TEX : PROCESS  MIX

A>DIR PR*.T*
A: PRINT    TEX : PRIME    TX

A>DIR PR*.T? [DRIVE=ALL]
A: PRIME    TX
M: PRINT    TM
```

This command is described in Sections 2.8 and 2.10 ('Finding the size of a file' and 'Listing the directory').

DIRSYS — Built-in command

Displays the names and associated details of all system files accessible by the user through the default or the specified drive.

DIRSYS can be shortened to DIRS.

`DIRSYS` displays the names and filetypes of all such files on the disc in the default drive.

`DIRSYS` *drive*`:`
displays the names and filetypes of all system files on the disc in the specified drive.

`DIRSYS` *filespec*
is used to check that the required file is on a particular disc.

`DIRSYS` *filespec-including-wildcards*
is used to display all system files with similar names and/or filetypes. * matches with any number of characters in the same part of the file specification, whereas ? matches only with a character or space in the same position.

If searching the directory fails to find any file meeting the given specification, the message `No File` is displayed.

If non-system files exist matching the given specification, the message `NON-SYSTEM FILE(S) EXIST` is displayed.

If the listing fills more than one screen, the system pauses when it gets to the bottom of the screen. Press RETURN to see the remainder of the listing.

Examples

```
A>DIRSYS
A: GENCOM    CMD : HEXCOM    CMD : PATCH     OVR

A>DIRS *.CMD
A: GENCOM    CMD : HEXCOM    CMD
```

This command is described briefly in Section 2.10 ('Listing the directory')

DISCKIT Utility

Makes an exact copy of one disc on another, gives a disc the required format or verifies that all the data on a disc is readable by PCW9512.

The utility is invoked by typing `DISCKIT` [RETURN]. This starts by instructing you to remove the disc(s) from the drive(s) and then displays the Main Menu.

The menus are graphical representations of the relevant part of the keyboard, labelled to show which key selects which option.

System messages about movement of discs and error messages appear at the top of the screen. The messages are intended to be self-explanatory.

The first letter of `'R-etry'`, `'I-gnore'` or `'C-ancel'` is sufficient to produce the desired effect.

Copying

Entered by selecting [f5] from the main menu. Note that any formatting required is carried out automatically as part of the copying process.

Single-drive systems

a) insert the disc you want to copy in the disc drive and then press **Y**. Pressing any other key returns to the main menu.

b) remove and insert discs in accordance with messages at the top of the screen.

Two-drive systems

a) select from menu which drive to read from: [f3] to read from Drive A; [f1] to read from Drive B; [EXIT] to return to the main menu.

b) select from menu which drive to write to: [f3] to write to Drive A; [f1] to write to Drive B; [EXIT] to return to the main menu.

c) insert the disc you want to copy (the disc to READ) and the disc you want to make the copy onto (the disc to WRITE) as specified and then press **Y**. Pressing any other key returns to the main menu.

d) insert and remove discs in accordance with messages at the top of the screen.

After the completion of each copy operation, duplicating one disc on another disc,

the user is offered the option of repeating the copy operation with a different source disc and a different destination disc: **Y** selects this option; any other key returns to the main menu.

Formatting

Entered by selecting [f3] from the main menu. Note that formatting a disc on which data is stored erases that data.

Single-drive systems

a) insert disc to be formatted and press **Y**; pressing any other key returns to the main menu.

b) insert and remove discs in accordance with messages at the top of the screen.

Two-drive systems

a) select from menu which drive will hold the disc to format: [f3] for Drive A; [f1] for Drive B; [EXIT] returns to the main menu.

b) insert disc to be formatted as specified and press **Y**; pressing any other key returns to the main menu.

After the completion of each format operation, the user is offered the option of repeating the format operation with a different disc: **Y** selects this option; any other key returns to the main menu.

Verifying

Checks a disc by checking that all the information on it can be copied into memory. It is entered by selecting [f1] from the main menu. The whole of one side of the disc is read track by track.

Single-drive systems

a) insert disc to be formatted and press **Y**; pressing any other key returns to the main menu.

Two-drive systems

a) select from menu which drive will hold the disc to verify: [f3] for Drive A; [f1] for Drive B; [EXIT] returns to the main menu.

b) insert disc to be formatted and press **Y**; pressing any other key returns to the main menu.

If errors are found, the utility stops after each one and displays a message advising which file, if any, the error affects.

After the completion of each verify operation, the user is offered the option of repeating the verify operation with a different disc: **Y** selects this option; any other key returns to the main menu.

DISCKIT messages

```
Please insert disc to operation into the drive
Press any key to continue

There is no disc in drive drive
Please insert disc to operation into the drive
R-etry or C-ancel?

The disc is write-protected
Please insert disc to operation into the drive
R-etry or C-ancel?

That is the wrong disc
Please insert disc to operation into the drive
Press any key to continue

Disc error on [drive:] track number, sector number
- comment about error type
R-etry[, I-gnore] or C-ancel?
```

This utility is described in Sections 2.2 and 2.9 ('Copying discs' and 'Formatting discs').

Note: If when you are copying one disc to another, DISCKIT describes the 720K disc you are copying to as 180K and says it will format it while copying, the chances are that you have inserted the disc upside down. We suggest abandoning the copy (by pressing ALT+C) and starting again: otherwise you will have to remember to use this disc upside down whenever you use it.

DUMP Utility

Displays on screen the contents of a file in both hexadecimal and ASCII format.

DUMP *filespec*

displays in this form the contents of the file with the given file specification.

Example

```
CP/M 3 DUMP - Version 3.0
0000: 18 69 53 45 54 53 49 4F 20 23 31 31 37 0D 0A 44  .iSETSIO #117..D
0010: 65 76 65 6C 6F 70 65 64 20 62 79 20 4C 6F 63 6F  eveloped by Loco
0020: 6D 6F 74 69 76 65 20 53 6F 66 74 77 61 72 65 20  motive Software
0030: 4C 74 64 2E 0D 0A 43 6F 70 79 72 69 67 68 74 20  Ltd...Copyright
0040: 28 43 29 20 31 39 38 35 20 41 6D 73 74 72 61 64  (C) 1985 Amstrad
0050: 20 43 6F 6E 73 75 6D 65 72 20 45 6C 65 63 74 72   Consumer Electr
0060: 6F 6E 69 63 73 20 50 4C 43 0D 0A ED 73 09 11 31  onics PLC...s..1
0070: 0B 12 CD 6C 07 CD EE 06 DC 80 01 ED 7B 09 11 C9  ...l........{...
0080: 79 FE 03 CA E4 05 CD C6 01 11 B6 01 C2 9F 05 CD  y...............
0090: 4C 02 CC 9F 05 11 A1 01 CA 41 06 CD F1 01 C3 20  L........A..... 
00A0: 04 53 49 4F 20 6C 65 66 74 20 75 6E 63 68 61 6E  .SIO left unchan
00B0: 67 65 64 0D 0A 24 53 49 4F 20 6E 6F 74 20 66 6F  ged..$SIO not fo
00C0: 75 6E 64 0D 0A 24 CD 1C 02 C0 7E E6 10 C6 F0 9F  und..$....~.....
00D0: 32 08 11 CD A5 07 2F 3C 1F F5 9F 32 00 11 F1 1F  2...../<...2....
00E0: 9F 32 01 11 ED 43 02 11 ED 53 04 11 22 06 11 AF  .2...C...S.."...
00F0: C9 CD 1C 02 3A 08 11 E6 10 AE E6 10 AE 77 2A 00  ....:........w*.
0100: 11 7D 1F 7C 17 E6 03 2F 3C ED 4B 02 11 ED 5B 04  .}.|.../<.K...[.
0110: 11 2A 06 11 C5 CD 9F 07 E1 C3 AB 07 D5 C5 CD 96  .*..............
```

This utility is not covered any further in this manual.

ED Utility

Edits the disc file with the given file specification. It is the CP/M Plus Text Editor, and it responds to its own set of commands (tabulated below).

It may also be used to create a new disc file.

Except where the edited file is going to directly replace the source file, the ED command will fail if a file already exists with the same file specification.

After opening the source and destination files, ED displays the prompt

```
: *
```

indicating that it is ready to receive an editing command. This prompt is repeated whenever the current command is completed.

`ED` *filespec* opens the file with the given file specification. The edited file takes over the source file's entry in the directory. The old version is retained with the filetype BAK. If no source file is found, the message `NEW FILE` is displayed, followed by `:*`.

`ED` *source-filespec dest-filespec*
opens the file with the given souce file specification. The edited file is stored as a file with the given destination file specification. The old version is retained with its original file specification.

`ED` *filename .filetype drive*`:`
opens the file on the disc in the default drive that has the given filename and filetype. The edited file is stored on the disc in the named *drive* with the same filename and filetype. The old version is retained with its original file specification.

Note: ED uses an area of memory as its workspace and before you can edit a file, you have to use ED's APPEND command to read it into this workspace. The workspace is big enough to hold most reasonably sized files, but sometimes the file to be edited is bigger than the workspace. Such a file will have to be edited in sections.

Type **E** to end the edit.

Examples

`A>ED MYPROG.1`

causes the file MYPROG.1 on the disc in Drive A to be opened for editing. The new version is stored as MYPROG.1, while the old version is stored as MYPROG.BAK. If the file MYPROG.1 doesn't already exist, a file with this name is created on Drive A.

`A>ED MYPROG.1 B:`

causes the file MYPROG.1 on the disc in Drive A to be opened for editing. The new version is stored as MYPROG.1 on the disc in Drive B.

ED has its own set of commands for inserting new material, deleting old material and so on. These are outlined below. Do not expect the cursor keys and the two DEL keys to have their usual effect.

ED commands

Command	Action
*n*A	appends *n* lines from the source file to the ED workspace
0A	appends lines from the source file until the workspace is half full.
#A	appends lines from the source file until the workspace is full or the end of file is reached.
B, -B	moves the workspace pointer to the beginning (B) or end (-B) of the workspace.
*n*C	moves the workspace pointer *n* characters forward through the workspace (backwards if *n* is negative).
nD	deletes the *n* characters after the workspace pointer (before if *n* is negative).
E	saves the new file and returns to CP/M
F*string*'Control-Z'	finds the specified character string in the workspace beyond the current position of the pointer.
H	saves the current version of the file, then reopens the edit using this file as the source.
i	enters insert mode. Press EXIT to leave this mode.
i*string*'Control-Z'	inserts the given string at the position of the workspace pointer.
*n*K	deletes the *n* lines after the workspace pointer (before if *n* is negative).
*n*L	moves the workspace pointer *n* lines forward through the workspace (backwards if *n* is negative).

`0L`	moves the workspace pointer to the beginning of the current line.
*n*M*commands*	instructs ED to execute the given commands *n* times.
n	moves the workspace pointer *n* lines forward (backwards if *n* is negative) and displays that line.
n:	moves the workspace pointer to line *n* and displays that line.
O	abandons the editing so far, returning to the original version for re-editing.
*n*P	moves the workspace pointer *n* lines forward through the workspace (backwards if *n* is negative) and displays all those lines.
Q	abandons the edit and returns to CP/M.
R*filespec* ' Control-Z '	reads the named file into the ED workspace, appending it to whatever is already in there.
*n*S*old-string* ' Control-Z ' *new-string*	replaces *n* instances of *old-string* with *new-string*, the search being carried out forwards from the current position of the workspace pointer.
*n*T	displays the *n* lines after the workspace pointer (before it if *n* is negative), leaving the pointer in its current position.
*n*W	writes the first *n* lines in the workspace to the destination file.
*n*X*filespec*	writes *n* lines from the workspace into the named file, appending them to any other lines already in that file through a previous *n*X*filespec* instruction.

ED error messages

All the error messages generated within the text editor have the same form:

`BREAK "`*symbol*`" at` *letter*

The symbol identifies the type of failure (tabulated below) while the letter is that of the current editing command.

Symbol

#	Search failure: specified string not found
?*letter*	Unrecognised command letter: can also imply command not correctly specified
Ø	LIB file specified in an R command not found
>	Buffer full or specified string too long
E	Command aborted
F	File error (followed by either `DISK FULL` or `DIRECTORY FULL`)

ERASE — Built-in command

Deletes the reference to one or more files from a disc's directory. Directory and data space on the disc are automatically reclaimed for subsequent use by other files. ERASE can be shortened to ERA.

`ERASE` *filespec*
: erases the file with the given file specification.

`ERASE` *filespec-including-wildcards*
: erases **all** files with file specifications that match the given specification. It first asks for confirmation that the file specification has been has been entered correctly. This version should only be used with great care.

`ERASE` *filespec-including-wildcards* `[C]`
: prompts for confirmation before erasing each file with a file specification matching the given specification. Type `Y` to confirm the action; `N` to keep the file. **Note:** To use this, you must have the companion utility ERASE.COM on the search path.

If the system fails to find any file matching the given specification, the message `No File` is displayed.

Examples

```
A>ERASE MYFILE.10
```
erases MYFILE.10 from the disc in the default drive (Drive A).

```
A>ERA *.BAK
ERASE *.BAK (Y/N)?Y
```
erases all files with the filetype BAK from the disc in the default drive (Drive A), but asking for confirmation before starting to erase the files.

```
A>ERA B:*.*
ERASE B:*.* (Y/N)?Y
```
erases all files from the disc in Drive B, having first asked for confirmation.

```
A>ERA B:*.BAK [C]
B:filename.BAK (Y/N)?Y
```
erases the files with the filetype BAK from the disc in Drive B one by one, asking each time for confirmation.

This command is described in Section 2.7 ('Erasing files', page 394)

GENCOM Utility

Attaches one or more Resident System Extension (RSX) to a command file, thereby enabling the program within the command file to use the facilities of the named RSX's.

Resident system extensions are additional operating system modules, temporarily held in the computer's memory, that extend or modify the way CP/M Plus operates.

A maximum of 15 RSX's may be attached at one time.

The GENCOM utility is also used to return the command to its original state.

This utility is not covered any further in this manual.

GET Utility

Instructs the system to take the input it would normally get from the console (ie. the keyboard) from a named file. This input can be either CP/M commands or the data needed by a program or both.

The console input is taken from the named file until that file is exhausted or the program terminates.

Unless instructed otherwise through one of the GET utility options, the input is echoed on the monitor screen. Options are listed between square brackets, separated by commas or single spaces.

`GET CONSOLE INPUT FROM FILE` *filespec*

tells the system to get the input for the program that is about to be run from the file with the given file specification, until that file is exhausted or the program terminates. The command to run the program must be the next instruction typed in at the keyboard. All the inputs from the file are displayed on the screen.

`GET CONSOLE INPUT FROM FILE` *filespec* `[SYSTEM]`

tells the system to take all the input it would normally expect from the console from the file with the given file specification, until that file is exhausted. This file will include instructions to run programs as and when required. All inputs from the file are displayed on the screen.

`GET CONSOLE INPUT FROM FILE` *filespec* `[NO ECHO]`

tells the system to get the input for the program that is about to be run from the file with the given file specification, until that file is exhausted or the program terminates. The command to run the program must be the next instruction typed in at the keyboard. The inputs from the file are not displayed on the screen.

`GET CONSOLE INPUT FROM CONSOLE`

tells the system to once again get its input from the keyboard. This terminates a preceding `GET FILE` command.

Examples

```
A>GET CONSOLE INPUT FROM FILE CONSIN.DAT [NO ECHO]
A>MYPROG
```

tells the system to get all the console input required by MYPROG from a file on the disc in the default drive called CONSIN.DAT. This input will not be displayed on the screen as the program is run.

```
A>GET CONSOLE INPUT FROM FILE B:CONSIN.CAD [SYSTEM,NO ECHO]
```

tells the system to take all its console input from the file on the disc in Drive B called CONSIN.CAD, until that file is exhausted. This input will not be echoed on the screen.

This utility is not covered any further in this manual.

HEXCOM Utility

Generates a command file from a hexadecimal format file.

This utility is not covered any further in this manual.

INITDIR Utility

Used in conjunction with the SET utility either to allow date and time stamping of the files on the disc in a specified drive or to remove this facility if it is already in force. INITDIR reformats the directory and, if there are any files already on the disc, checks that there is enough room in the directory for date and time stamping of these files. If not, it fails to reformat the directory and puts up an error message.

`INITDIR` *drive*:

reformats the directory of the disc in the specified drive, either to allow date and time stamping, or to remove this information if the facility is already in force. The user is asked to respond to self-explanatory messages.

Examples

```
A>INITDIR B:
```

reformats the directory of the disc in Drive B.

This utility is not covered any further in this manual. Moreover, it is incompatible with the PCW9512 word processing system and so we recommend that you do not use this feature on any disc that you also use to store LocoScript documents.

LANGUAGE Utility

Selects one of the eight internationally recognised character sets, with the result that certain keystrokes may cause different characters to appear on the screen and on the printer.

It is not advisable to use this utility unless you know the details of the different character sets. These details are outside the scope of this User Guide.

The default setting is Language 3, the UK set.

`LANGUAGE` *n* sets the character set to that identified by the number *n*.

Language identifiers

0 USA
1 France
2 Germany
3 UK
4 Denmark
5 Sweden
6 Italy
7 Spain

This utility is described in Appendix I ('CP/M Plus character sets')

LIB Utility

Either creates a library of object modules or appends, replaces, selects or deletes modules from an existing library. It may also be used to obtain information about the contents of an existing library.

The object modules must in Microsoft REL format, as produced for example by the RMAC utility.

Library files are given the filetype REL.

This utility is not covered any further in this manual.

LINK Utility

Combines relocatable object modules into a command file.

The object modules are held either in individual files (the form in which they are produced, for example, by RMAC) or in libraries.

This utility is not covered any further in this manual.

MAC Utility

MAC is CP/M Plus's Macro Assembler.

Takes an assembler program (filetype ASM) and produces a HEX (hexadecimal format) file, a PRN file (suitable for output on the screen or the printer) and a SYM file. The latter contains a sorted list of the symbols defined in the program.

This utility is not covered any further in this manual.

MATRIX Utility

Resets the printer to work as an Epson FX-80 compatible printer and sets a number of printer parameters. The parameters set include the size of paper, whether the paper is single sheet or continuous and the number of lines per inch you want to use. The values that are set become the new default values. (See Appendix II.)

`MATRIX` resets the printer to work as an Epson-compatible printer. The following printer parameters are set to their current default values:

- Line Pitch
- Form Length
- Gap length
- Type of stationery (Single sheet or Continuous)
- Response to the Paper Sensor

`MATRIX` *option[, option]*

resets the printer to work as an Epson-compatible and sets one or more of the printer parameters. The values that are set become the new default values. The options must be separated by commas or single

spaces and may be given in any order. Some of the options affect the settings of other parameters, unless these are set explicitly in the same command line.

The options are used to generate printer control codes which are sent to the printer. As the commands are obeyed, they are reported on the screen.

The options are:

`FORM LENGTH` *n* sets the form length (page length). *n* is the length given as the equivalent number of lines and must be in the range 6...99. If the Line Pitch is not set explicitly in the same MATRIX command, then it is set to six lines per inch both for subsequent use and for the purposes of the current command. If the Gap Length is not set explicitly in the same command, it is set to zero.

`GAP LENGTH` *n* sets the gap (number of lines of the page skipped over) at the bottom of the page. *n* must be in the range 0...99. If the Line Pitch is not set explicitly in the same MATRIX command and n is not zero, then the line pitch is set to six lines per inch both for subsequent use and for the purposes of the current command.

`LINE PITCH` *n* sets the line pitch (number of lines printed per inch). *n* may be either 6 or 8.

`SINGLE SHEET` selects use of single sheet stationery. If Paper Out Defeat is not set explicitly in the same MATRIX command, it is set to ON.

`CONTINUOUS STATIONERY`
selects use of continuous stationary. If Paper Out Defeat is not set explicitly in the same MATRIX command, it is set to OFF.

`PAPER OUT DEFEAT` *state*
sets whether the Paper End Detector is ignored. *state* can be either `ON` or `OFF`.

`A4` sets the parameters for A4 paper. These are:

Form Length: 70 lines
Line Pitch: 6 lines per inch
Gap Length: 3 lines
Single Sheet stationery
Paper Out Defeat: ON

`A5` sets the parameters for A5 paper. These are:

Form Length: 50 lines
Line Pitch: 6 lines per inch
Gap Length: 3 lines
Single Sheet stationery
Paper Out Defeat: ON

n sets the parameters for continuous stationery with a form length of *n* inches. These are:

Form Length: *n* inches
Line Pitch: 6 lines per inch
Gap Length: 0
Continuous stationery
Paper Out Defeat: OFF

n must be in the range 1...17.

`FORM LENGTH` may be shortened to `F`; `GAP LENGTH` to `G`; `LINE PITCH` to `L`; `SINGLE SHEET` to `S`; `CONTINUOUS STATIONERY` to `C`; `PAPER OUT DEFEAT` to `P`.

Examples

```
A>MATRIX FORM LENGTH 70
```

first sets the Line Pitch to 6 lines per inch and then sets the Form Length to 70 lines in this pitch. The Gap Length is set to zero. These values then become the default settings.

```
A>MATRIX F 70, L 8
```

first sets the Line Pitch to 8 lines per inch and then sets the Form Length to 70 lines in this pitch. The Gap Length is set to zero. These values then become the default settings.

```
A>MATRIX A4
```

first sets the Line Pitch to 6 lines per inch and then sets the Form Length to 70 lines in this pitch and the Gap Length to 3 lines. The printer is set to expect Single Sheet stationery and the Paper End detector is ignored. These values then become the default settings.

This utility is introduced in Section 2.12 ('Operating the printer')

PALETTE Utility

Used to change the screen display from light characters on a black background to its reverse video counterpart and back again.

`PALETTE 1 Ø`
sets reverse video (black characters on a light background).

`PALETTE Ø 1`
sets normal video (light characters on a black background).

This utility is not covered any further in this manual.

PAPER Utility

This utility is only provided for compatibility with previous PCW machines. It may also be used with an external FX-80 compatible printer. When using the built-in printer it is advisable to use either DAISY or MATRIX.

Sets up the printer for the paper you want to use. The parameters set include the size of paper, whether the paper is single sheet or continuous and the number of lines per inch you want to use. These can be set piecemeal as the latest value of any of the parameters is the one that applies.

Note: This utility only affects the printer settings when the printer is working as an Epson-compatible. (See Appendix II for details.)

`PAPER` *option[, option]*
sets one or more of the paper parameters. The options are separated by commas or single spaces and may be given in any order. Some of the options affect the settings of other parameters, unless these are set explicitly in the same command line.

The options are used to generate printer control codes which are sent to the printer. As the commands are obeyed, they are reported on the screen.

The options are:

`FORM LENGTH` *n* sets the form length (page length). *n* is the length given as the equivalent number of lines and must be in the range 6...99. If the Line Pitch is not set explicitly in the same PAPER command, then it is set to six lines per inch both for subsequent use and for the purposes of the current command. If the Gap Length is not set explicitly in the same command, it is set to zero.

`GAP LENGTH` *n* sets the gap (number of lines of the page skipped over) at the bottom of the page. *n* must be in the range 0...99. If the Line Pitch is not set explicitly in the same PAPER command and n is not zero, then the line pitch is set to six lines per inch both for subsequent use and for the purposes of the current command.

`LINE PITCH` *n* sets the line pitch (number of lines printed per inch). *n* may be either 6 or 8.

`SINGLE SHEET` selects use of single sheet stationery. If Paper Out Defeat is not set explicitly in the same PAPER command, it is set to ON.

`CONTINUOUS STATIONERY`
selects use of continuous stationary. If Paper Out Defeat is not set explicitly in the same PAPER command, it is set to OFF.

`PAPER OUT DEFEAT` *state*
sets whether the Paper End Detector is ignored. *state* can be either `ON` or `OFF`.

`A4` sets the parameters for A4 paper. These are:

Form Length: 70 lines
Line Pitch: 6 lines per inch
Gap Length: 3 lines
Single Sheet stationery
Paper Out Defeat: ON

`A5` sets the parameters for A5 paper. These are:

Form Length: 50 lines
Line Pitch: 6 lines per inch
Gap Length: 3 lines
Single Sheet stationery
Paper Out Defeat: ON

n sets the parameters for continuous stationery with a form length of *n* inches. These are:

Form Length: *n* inches
Line Pitch: 6 lines per inch
Gap Length: 0
Continuous stationery
Paper Out Defeat: OFF

n must be in the range 1...17.

`PAPER DEFAULTS`
saves the current printer settings for use when the printer is reset.

`FORM LENGTH` may be shortened to `F`; `GAP LENGTH` to `G`; `LINE PITCH` to `L`; `SINGLE SHEET` to `S`; `CONTINUOUS STATIONERY` to `C`; `PAPER OUT DEFEAT` to `P`; and `DEFAULTS` to `D`.

Examples

`A>PAPER FORM LENGTH 70`
first sets the Line Pitch to 6 lines per inch and then sets the Form Length to 70 lines in this pitch. The Gap Length is set to zero.

`A>PAPER F 70, L 8`
first sets the Line Pitch to 8 lines per inch and then sets the Form Length to 70 lines in this pitch. The Gap Length is set to zero.

`A>PAPER A4`
first sets the Line Pitch to 6 lines per inch and then sets the Form Length to 70 lines in this pitch and the Gap Length to 3 lines. The printer is set to expect Single Sheet stationery and the Paper End detector is ignored.

This utility is not covered any further in this manual.

PATCH Utility

This utility is outside the scope of this manual.

PIP Utility

Transfers data from a logical input device (the Source) to a logical output device (the Destination). For example, it can be used to copy one or more files from one disc to another; to output on the printer a character file from a disc; or to create a file on disc from input at the keyboard.

It can also combine inputs from two or more sources into one output.

PIP transfers any file attributes of the source file to the destination file and respects passwords as and where applied. This is described in Section 2.15.

The operation of PIP may be terminated by pressing STOP.

`PIP` *dest-filespec=source-filespec*

copies the named source file and stores the copy as the file with the given destination file specification. This version can be used to duplicate a file on the same disc. *dest-filespec* is also used here to represent one of AUX, CON, PRN or LST, while *source-filespec* may also be one of AUX, CON, NUL or EOF.

CON represents the console (keyboard and screen);
AUX any auxilliary input/output device;
LST and PRN the printer;
NUL a source that produces 40 hexadecimal zeroes;
EOF a source of a single 'Control-Z' character.

The files so copied must contain only printable characters.

`PIP` *dest-filespec=drive*:

copies the file on the disc in the specified drive with the same filename and filetype as the destination file onto the destination disc, where it is stored with that filename and filetype. This version is not applicable to duplicating a file on the same disc.

`PIP` *drive*:*=source-filespec*

copies the named source file onto the disc in the specified drive, where it is stored with the same filename and filetype. This version is not applicable to duplicating a file on the same disc.

`PIP` *drive*`:=`*filespec-including-wildcards*

copies onto the disc in the specified drive, all files whose file specifications match the given file specification. The files are stored on the destination disc with the original filenames and filetypes. *Actual-filename.filetype* is displayed as each file is copied. This version cannot be used to duplicate files on the same disc.

`PIP` *dest-filespec=sourcespec-1, sourcespec-2[, sourcespec-n]*

combines the listed files in order of listing and stores the result as a file with the given destination file specification. This file may be stored on the same disc as the source files.

`PIP` enters PIP's Multiple Command Mode, in which it prompts for the next in a sequence of PIP type commands by putting up an asterisk on the screen. The next command should be entered as in any other PIP instruction but without the PIP. Terminate by pressing RETURN after the asterisk.

All the above variants may be enhanced by using the PIP utility options.

One or more options may be listed after each file/drive specification, between square brackets and separated by single spaces. There should be no space between the end of the file/drive specification and the bracketed options.

The options available are listed below. Attention is drawn to the `G`*n* option if you are using User Numbers to keep your discs organised (see Section 2.12).

PIP options

Option	Result
C	Confirmation is requested before each element of the copy operation is executed.
E	The transfer is echoed on the screen.
F	All form feeds embedded in the source file are removed.
G*n*	The file is identified as belonging to user number *n*.
L	All upper case characters are coverted to lower case characters.
N	Line numbers are added to the destination file.
O	Object file transfer for machine code files. PIP ignores any Control-Z end-of-file during concatenation and transfer. Use this option if you are combining object code files.
P*n*	The number of lines per page in the destination file is set to *n*.
Q*string* ' Control-Z '	The copying process terminates after the given string.
R	The source file may be found in the directory of system files, which is not normally searched.
S*string* ' Control-Z '	The copying process starts at the beginning of the given string.
U	All lower case characters are converted to upper case characters.
V	The destination file is compared with the source file to check that the copying process has been accurate.
W	Storing the copy may overwrite a read-only file with the same file specification.
Z	The parity bit of each data byte in the destination file is set to zero.

Note: Except when used in multiple command mode, the Q and S options are only suitable for copying sections of text files if the strings you want to specify don't contain any lower case letters. This is because any lower case letters you type in the command line are interpreted as capital letters.

Examples

```
A>PIP CHAP1.TEX=SECT1.TX,SECT2.TX,SECT3.TX
```

combines the contents of the files SECT1.TX, SECT2.TX and SECT3.TX into a single file which is subsequently stored as the file CHAP1.TEX. All the files concerned are on the disc in the default drive (Drive A).

```
A>PIP LST:=B:LETTER.TX[E P40]
```

lists out on the printer the text contained in the file LETTER.TX on the disc in Drive B, starting a new page every 40 lines. The output is echoed on the screen.

```
A>PIP LST:=CON:[U N P40]
```

lists out on the printer everything that is typed in at the keyboard, starting a new page every 40 lines. Additionally, all lower case characters are converted to upper case and the lines are numbered in sequence.

```
A>PIP B:[G3]=A: MYFILE [G2]
```

copies the file called MYFILE from user number 2 on Drive A to user number 3 on Drive B.

```
A>PIP
* CHAP1.TEX=SECT1.TX,SECT2.TX,SECT3.TX
* LST:=CHAP1.TEX[SDear Sir'Control-Z'Qfaithfully'Control-Z']
* RETURN
```

combines the contents of the files SECT1.TX, SECT2.TX and SECT3.TX into a single file which is stored as the file CHAP1.TEX: then lists this the section of the new file between 'Dear Sir' and 'faithfully' on the printer.

This utility is described in Section 2.3 ('Copying files').

PUT Utility

Instructs the system to send console (ie. screen) output or printer output to a disc file, either until instructed otherwise or until the end of the program which is about to be run.

One or more options may be listed in square brackets as part of the instruction. These should be separated by commas or single spaces.

Unless instructed otherwise, control characters will not be incorporated in any form in the file, console output will also be displayed (ie. echoed) on the screen but printer output will not be echoed on the printer.

`PUT CONSOLE OUTPUT TO FILE`*filespec*
tells the system to direct console output to a file with the given file specification. The output will be echoed on the screen.

`PUT PRINTER OUTPUT TO FILE`*filespec*
tells the system to direct printer output to a file with the given file specification. The output will not be echoed on the printer.

`PUT CONSOLE OUTPUT TO FILE`*filespec* `[SYSTEM]`
tells the system to direct console output to the file with the given file specification, until told otherwise through a `PUT CONSOLE OUTPUT TO CONSOLE` instruction. The output will be echoed on the screen.

`PUT PRINTER OUTPUT TO FILE`*filespec* `[SYSTEM]`
tells the system to direct printer output to the file with the given file specification, until told otherwise through a `PUT PRINTER OUTPUT TO PRINTER` instruction. The output will not be echoed on the printer.

`PUT CONSOLE OUTPUT TO FILE`*filespec* `[NO ECHO]`
kills the automatic echoing of the console output on the screen.

`PUT PRINTER OUTPUT TO FILE`*filespec* `[ECHO]`
causes the system to echo on the printer the output sent to the named file.

`PUT CONSOLE OUTPUT TO FILE`*filespec* `[FILTER]`
causes the stored version of the console output to contain printable representations of the control codes issued.

`PUT PRINTER OUTPUT TO FILE`*filespec* `[FILTER]`
causes the stored version of the printer output to contain printable representations of the control codes issued.

`PUT CONSOLE OUTPUT TO CONSOLE`
tells the system to revert to sending console output solely to the screen.

`PUT PRINTER OUTPUT TO PRINTER`
tells the system to revert to sending printer output solely to the printer.

Examples

`A>PUT CONSOLE OUTPUT TO FILE CONSOUT.TEX [SYSTEM,FILTER]`
causes all subsequent console output to be additionally stored as a file called CONSOUT.TEX on the disc in the default drive (Drive A), complete with printable versions of all the control codes. This will continue until a `PUT CONSOLE OUTPUT TO CONSOLE` instruction is issued.

```
A>PUT PRINTER OUTPUT TO FILE B:PRINOUT.TEX [FILTER,ECHO]
A>MYPROG
```
causes the printer output from MYPROG to be stored in a file on the disc in Drive B called PRINOUT.TEX, complete with printable versions of all the control codes. The output is also sent to the printer. The system will revert to only sending printer output to the printer when MYPROG terminates.

This utility is not covered any further in this manual.

RENAME — Built-in command

Changes the name of one or more files catalogued in the directory of a disc. It does not make new copies of the files.

The drive specifier in the new file specification must be identical to that in the old file specification. Additionally, the new specification may not be that of any existing file. RENAME may be shortened to REN.

`RENAME` *new-filespec=old-filespec*
: changes the name of the file with the given old file specification to that corresponding to the new file specification.

`RENAME`
: carries out the above operation, having first prompted the user for the new and old file specifications.

`RENAME` *new-filespec-including-wildcards=old-filespec-including-wildcards*
: changes the name of each file matching the given old file specification to one corresponding to the new file specification, replacing the wildcard characters with the appropriate characters from the original file specification. The wildcards in the old and new file specifications must therefore correspond exactly.

If no file is found that matches the given old file specification, the message `No File` is displayed on the screen.

If there is already a file on the disc with the given new file specification, CP/M searches for the companion utility RENAME.COM and if it finds it, it will display the message `Not renamed:` *filename.filetype* `file already exists, delete (Y/N)?`. If it doesn't find RENAME.COM, it displays the message `RENAME.COM required`

Examples

`A>REN NEWLETTR.TX=OLDLETTR.TX`
: renames the file OLDLETTR.TX NEWLETTR.TX.

`A>REN B:PR*.?X=B:SP*.?Y`
: renames, for example, the file SPAIN.TX as PRAIN.TY, the file SPIN.MX PRIN.MY, and the file SPA.AX as PRA.AY but leaves the file SPAIN.TEX unchanged.

This utility is described in Section 2.16 ('Renaming files')

RMAC Utility

RMAC is CP/M Plus's Relocatable Macro Assembler.

Converts an assembler program file (filetype ASM) into a relocatable (REL) file, that can then be linked to create a command (COM) file. Also produced are a PRN file (suitable for printing or displaying on the screen) and a SYM file. The latter contains a sorted list of the variables defined in the program.

This utility is not covered any further in this manual.

SAVE Utility

Intercepts the return to the system following the execution of the next program and then copies the contents of the memory between specified hexadecimal addresses into a named file.

The utility prompts the user for the program to be run, the name of the file, the start address and the end address.

SAVE activates the utility.

Example

```
A>SAVE
A>MYPROG
```

...output from MYPROG...

```
File (or RETURN to exit)?DUMPFILE
From?100
To?400
```

causes the contents of the memory between hexadecimal addresses #100 and #400 following the running of the program MYPROG to be copied into a file on the disc in the default drive (Drive A) called DUMPFILE.

This utility is not covered any further in this manual.

SET Utility

Sets file and drive attributes and allows labelling of discs to make disc cataloguing easier.

The SET utility can also be used to give a file password protection and to give it various special attributes. The SYS option is useful to apply to programs with User Number 0 that you want to use to process files with different User Numbers.

It is not advisable to use password protection or to set any of the special attributes on any disc that will also store word processing files created with LocoScript software.

SET *filespec* [*option[, option]*]

gives the named file the attributes specified by the options. One or more options may be listed within the square brackets, separated by commas or single spaces. The options include:

DIR which converts a system file to a non-system file
SYS which converts a non-system file to a system file
RO which makes the file open only to read-only access
RW which converts a read-only file to one allowing full read-write access

SET *drive*: [*option*]

gives the named drive the attribute specified by the option. The options are:

RO which permits read-only access to the files on the disc in the named drive
RW which converts the drive back to full read-write access
PROTECT=*mode*
which sets password protection to ON or OFF
PASSWORD=*password*
which sets the password used to protect the drive

SET *drive*: [NAME=*labelname*.*labeltype*]

assigns the given label to the disc in the specified drive. The same restrictions apply to the choice of *labelname* and *labeltype* as apply to the choice of filenames and filetypes.

SET *filespec* [PASSWORD=*password*, PROTECT=*mode*]
sets the password used to protect a file and the level of protection that this password gives (see Section 2.15). The possible modes are:

READ	Reading, copying, changing, deleting and renaming
WRITE	Changing, deleting and renaming but not reading and copying
DELETE	Just deleting

SET *filespec*; *password* [PROTECT=NONE]
clears the password protection from the given file

SET [DEFAULT=*password*]
sets the default password – ie. the password that CP/M assumes if a password is required but none is actually quoted in the command line.

Examples

A>SET MYFILE.TEX [RO,SYS]
makes MYFILE.TEX a system file to which just read-only access is allowed.

A>SET B:[RO]
restricts access to discs in Drive B to read-only. With this restriction in force, no new files can be written to the disc, files cannot be copied to the disc, files on the disc may not be erased and neither may they be renamed.

A>SET [NAME=MYDISC1]
labels the disc in the default drive MYDISC1.

A>SET MYFILE.TEX [PASSWORD=SECRET, PROTECT=WRITE]
makes it essential to quote the password SECRET before MYFILE.TEX can be changed, deleted or renamed.

A>SET MYFILE.TEX;SECRET[PROTECT=NONE]
clears password protection on MYFILE.TEX which had previously been protected with the password SECRET

A>SET [DEFAULT=SECRET]
sets the default password to SECRET

This utility is covered in Section 2.15.

SETDEF Utility

Defines and/or displays the disc search order, the drive used for temporary files and/or the filetype search order. The search order only affects the loading of programs and/or the execution of Submit (.SUB) files.

`SETDEF` displays the current disc search order, the drive used for temporary files and the current filetype search order amongst other things.

`SETDEF [TEMPORARY=`*drive*`:]`
sets the drive used for temporary files (produced, for example, by text editors). The default setting is Drive M.

`SETDEF` *drive*`:[,`*drive*`:]`
sets the order in which drives are searched. The default is just to search the system's default drive or the specified drive. Use * to specify the default drive in the search order.

`SETDEF [ORDER=(COM,SUB)]`
instructs CP/M to look up commands first as a COM file and then as a SUB file.

`SETDEF [ORDER=(SUB,COM)]`
instructs CP/M to look up commands first as a SUB file and then as a COM file.

Further forms of SETDEF exist, but these are outside the scope of this manual.

Examples

```
A>SETDEF B:,*
```

instructs the system to search for each program file initially on the disc in Drive B, but if that fails to then search for it on the disc in the default drive.

This utility is described in Section 2.18 ('Shortening the command line')

SETKEYS Utility

Configures the keyboard in accordance with data contained within a pre-defined Key Definition File.

SETKEYS *filespec*

configures the keyboard in accordance with the data within the file with the given file specification.

By setting up a suitable Key Definition File and then using the SETKEYS command to implement the key definitions contained in the file, you can make specific keystrokes generate characters, control codes or even a whole string of characters and codes – instead of whatever character or code they are set up to generate initially.

Key Definition Files are supplied on the CP/M Start-up disc that can be used with the SETKEYS utility to configure your keyboard to suit the WordStar program (and other programs like SuperCalc that are designed to use these keystrokes) and another to suit Dr. Logo. These are stored as KEYS.WP and KEYS.DRL respectively.

The Key Definition File is made up of a sequence of lines, each of which specifies the number of the key you want to affect, the shift state of this key that you want to affect (Normal, with Shift, with Alt, with Extra or with Shift and Alt) and the details of the code you want this key to generate, together with an optional comment. The structure of these lines is as follows:

key-no shift-state code [comment]

The key numbers are obtainable from the diagram in Appendix I.

The shift states are: N or nothing for No shift; S for [SHIFT]; A for [ALT]; E for [EXTRA]; and SA for [SHIFT]+[ALT]. More than one shift state can be given here, the entries separated by single spaces. In that case, the definition applies to all the named shift states.

The code you want the key to generate can be entered in a number of different ways – "*char*", "↑'*value*'", "↑*char*" or "↑'*name*'", depending on the code that you want to generate. Here *char* is the character corresponding to this code, *value* is either its decimal or hexadecimal value, ↑*char* is the control code Control-*char*, and *name* is the special name associated with the code (see Appendix I, Section I.4). For example, the code corresponding to the capital letter A (decimal value 65) can be entered as "A" or as "↑'65'" or as "↑'#41'", while the control code Control-M (decimal value 13) which generates a Carriage Return can be entered as

"↑'13'", "↑'#0D'", "↑M" or "↑'CR'"

Note: The code corresponding to the characters ↑ and " cannot be entered as "*char*" but they can be entered as "↑↑" and "↑"", respectively.

Codes with values between #80 and #9E (decimal 128...158) are expansion tokens which are available to be associated with a string of characters and codes – for example, a complete command line. Such a string of characters and codes is known as an expansion string. A number of expansion strings are automatically set when CP/M is loaded: these are listed in Appendix I, Section I.2.3. To associate other expansion strings with expansion tokens, you have to include lines of the following form in the Key Definition File:

E *expansion-token* "*expansion-string*" *[comment]*

Here *expansion-token* is a decimal or hexadecimal value and *expansion-string* is a string of characters and control codes. Characters can be entered as char or ↑'*value*'; Control codes can be entered as ↑'*value*', ↑*char* or ↑'*name*'.

↑ is obtained on a standard PCW9512 by pressing EXTRA+U or EXTRA+;

Note: The total number of characters and codes held in expansion strings must not exceed 120. (The supplied expansion strings make up a total of 30 codes.)

The optional comment is intended to be used to remind the user of the action of the key definition on that line. Any text may be inserted here.

Lines within the file that contain errors will generate error messages but will otherwise be ignored.

Important: To return to the standard set of key definitions (ie. those set immediately after CP/M has been loaded), insert the CP/M Start-up disc in Drive A and type the command:

```
A:CPMKEYS
```

Example

```
SETKEYS KEYS.WP
```

Implements the key definitions specified in in the Key Definition File KEYS.WP

To see an example of an Key Definition File, use the TYPE command to list either KEYS.WP or KEYS.DRL.

This utility is described in Appendix I ('CP/M Plus character sets')

SETLST Utility

Sends a string of codes to the printer to initialise it. The string of codes sent is held in a Printer Definition File, which is named in a command.

The printer that it initialises is the one that is addressed by the logical device LST:. This is normally the built-in printer, but see the DEVICE command.

The codes required to initialise a printer in a particular way will be given in the manual for that printer. The codes that initialise the built-in printer (or other 630-compatible printers) are given in Appendix II, Section II.3, with comparable details in Appendix II, Section II.4 to use when the printer is being used in its Epson-compatible mode.

The codes can be entered in the printer definition file in a number of different ways – "*char*", "↑'*value*'", "↑*char*" or "↑'*name*'", depending on the code. Here *char* is the character corresponding to this code, *value* is either its decimal or hexadecimal value, ↑*char* is the control code Control-*char*, and *name* is the special name associated with the code (See Appendix I, Section I.4). For example, the code corresponding to the capital letter A (decimal value 65) can be entered as "A" or as "↑'65'" or as "↑'#41'", while the control code Control-M (decimal value 13) which generates a Carriage Return can be entered as "↑'13'", "↑'#0D'", "↑M" or "↑'CR'"

Note: The code corresponding to the characters ↑ and " cannot be entered as "*char*" but they can be entered as "↑↑" and "↑"", respectively.

↑ is obtained on a standard PCW9512 by EXTRA+U or EXTRA+;

SETLST *filespec*

initialises the printer by sending the string of codes stored in the Printer Definition File specified by filespec.

Example

```
A>SETLST PTRINIT.A
```

Initialises the printer addressed by the logical device LST by sending the string of codes held in the Printer Definition File PTRINIT.A on the default drive. This file might, for example, contain the following:

```
↑'ESC' @ ↑'ESC' 1 ↑'0' ↑'ESC' Q ↑'139' ↑'SI' ↑'ESC'd
```

This example string is made up of codes that are used by Epson-compatible printers. If this string were sent to such a printer, it would:

- reset the printer into FX-80 mode
- set the left margin at character position 0
- set the right margin at character position 139
- set Condensed (17 pitch characters), and finally
- make this the default set-up for the printer

• The Printer Control codes used to initialise the built-in printer (or any other 630-compatible printer) are given in Appendix II ('Advanced use of the printer'). This appendix also lists the Printer Control codes that apply when the printer is used as an Epson-compatible printer.

SETSIO Utility

Sets the parameters of the serial interface addressed via the logical device SIO. This is normally the Serial Interface provided by adding an Amstrad RS232C/Centronics Interface to the PCW9512's Expansion port.

The parameters can be set piecemeal as the latest value of any of the parameters is the one that applies.

`SETSIO` *option[option]*

sets one or more of the interface parameters, then displays all the current settings. The options are separated by single spaces and are taken in any order from:

`TX` *n*	sets the transmitter baud rate
`RX` *n*	sets the receiver baud rate
n	sets both baud rates to the same value
`BITS` *n*	sets the number of data bits (5, 6, 7 or 8)
`STOP` *n*	sets the number of stop bits (1, 1.5 or 2)
`PARITY` *type*	sets the parity type (EVEN, ODD or NONE)
`XON` *state*	sets the XON protocol to ON or OFF
`HANDSHAKE` *state*	sets the handshake to ON or OFF
`INTERRUPT` *state*	sets the interrupt driven input to ON or OFF.

TX may be shortened to T; RX to R; STOP to S; BITS to B; PARITY to P; XON to X; and HANDSHAKE to H

The allowed baud rates are 50, 75, 110, 134.5, 150, 300, 600, 1200, 1800, 2400, 3600, 4800, 7200, 9600 and 19200

In the absence of any specific setting of the number of stop bits, this value will be set to 2 if the baud rate is 50, 75 for 110 but to 1 for any other value of the baud rate.

Any illegal option will generate an error message but otherwise just be ignored.

Examples

```
A>SETSIO
     9600 Bits 8 Parity none Stop 1 Xon off Handshake
     on

A>SETSIO P EVEN
     9600 Bits 8 Parity even Stop 1 Xon off Handshake
     on

A>SETSIO P EVEN, X ON, BITS 7
     9600 Bits 7 Parity even Stop 1 Xon on Handshake on
```

This utility is not covered any further in this manual.

SET24X80 Utility

Sets the screen size to 24 lines by 80 characters regardless of the actual screen size. This screen size is required by some application programs.

Alternatively, it restores the screen to its normal size of 31 lines by 90 characters.

`SET24X80`	sets 24 x 80 mode.
`SET24X80 ON`	sets 24 x 80 mode.
`SET24X80 OFF`	restores the screen's normal characteristics.

This utility is not covered any further in this manual.

SHOW Utility

Displays information about the accessed discs, including the access mode, the amount of free disc space, the disc label, the number of files on the disc corresponding to each user number and the number of free entries in the disc's directory.

`SHOW` displays the access mode and the remaining space on the disc (in kilobytes) for each logged-in drive in turn.

`SHOW` *drive*: displays the access mode and the remaining space (in kilobytes) on the disc in the specified drive.

`SHOW` *drive*`: [USERS]`
details all the user numbers applying to the disc, the number of files relating to each number and the number of free entries in the disc's directory.

`SHOW` *drive*`: [DIR]`
displays the number of free entries in the disc's directory.

`SHOW` *drive*`: [DRIVE]`
displays the characteristics of the specified drive.

`SHOW` *drive*`: [LABEL]`
displays the name of the disc in the specified drive.

Note: There must be no space between the drive specification and the bracketed options.

Examples

```
A>SHOW
A: RO, Space:  4k
B: RW, Space:104k

1A>SHOW [USERS]
Active User :    1
Active Files:    0    2    3    4
A: # of files:  10    2   11    1
A: Number of free directory entries: 28
```

This utility is described in Section 2.1 ('Assessing the available space')

SID Utility

SID is CP/M Plus's Symbolic Instruction Debugger.

Enables the execution of programs to be monitored - by displaying the contents of the memory, displaying the contents of the CPU registers and directing breakpoint operations during debugging.

The associated utilities, TRACE.UTL and HIST.UTL, provide additional debugging tools. TRACE provides a trace back of the instructions that led to a particular breakpoint in the program under test: HIST produces a histogram showing the frequency with which code from select program segments was accessed.

This utility is not covered any further in this manual.

SUBMIT Utility

Causes the batch of commands within a SUB file to be executed one by one, just as if they were typed in succession at the keyboard.

The SUB file is made up of CP/M Plus commands, nested SUBMIT commands (if so desired) and input data for CP/M commands and/or CP/M programs. Command lines may be no more than 128 characters long. Lines of input data are each started by a <

If a program run from within the SUB file terminates before using all its associated input data, the message `Warning: Program input ignored` is displayed before the next command within the file is executed. If too few lines of input data are given, SUBMIT expects these to be entered at the keyboard.

The SUB file can incorporate variables representing up to nine SUBMIT command inputs, represented by $1..$9. If a $ is to be included in the file for any other purpose, it must be inserted as $$

No filetypes are required in SUBMIT instructions.

`SUBMIT` *filespec*
: causes the set of commands contained within the specified SUB file to be executed line by line.

`SUBMIT` *filespec input1[inputN]*
: causes the set of commands contained within the specified SUB file to be executed line by line with $1 replaced by *input1*, and so on.

`SUBMIT`
: prompts for the specification of the SUB file to be executed and for any inputs that are required.

Example

```
A>SUBMIT SUBFILE INPUTA INPUTB
```

causes the commands within SUBFILE.SUB (which refers to $1 and $2) to be executed line by line, replacing $1 by INPUTA and $2 by INPUTB throughout.

This utility is described in Section 2.18 ('Shortening the command line')

TIMEOUT Utility

Enables/disables device timeouts.

As a rule, CP/M Plus automatically times out sending information to a device in order to prevent the system 'locking up' completely because the information is being sent to a non-existant device. So, for example, if [ALT] P is typed accidentally when no printer is connected, CP/M will recognise after about 10 seconds that no printer is responding and produce a message like this:

```
LPT not ready - Retry, Ignore or Cancel?
```

You can then either switch the printer on-line and Retry – or type C for Cancel and redirect the output to a null device.

Unfortunately, some printers take such a long time feeding a sheet of paper that CP/M times out before the operation has finished, requiring you to type R to continue. The better solution is to disable the timeout for the device by using the TIMEOUT command.

`TIMEOUT` *device* `OFF`
disables timeouts for the output device called device (Device names are given in the description of the DEVICE command)

`TIMEOUT` *device* `ON`
re-enables timeouts for device

`TIMEOUT` *device*
shows whether timeouts are enabled for device

`TIMEOUT` shows whether timeouts are enables for each device

Example

```
A>TIMEOUT SIO OFF
```
disables the timeout for the serial interface

WARNING: IF TIMEOUT OFF IS SELECTED FOR A DEVICE THAT IS NOT FITTED, CP/M WILL LOCK UP.

TYPE — Built-in command

Displays the contents of an ASCII file on the monitor, either a screenful at a time (press RETURN to see the next screenful) or continuously. Press STOP to return to CP/M.

`TYPE` *filespec*
displays the contents of the file with the given file specification a screenful at a time.

`TYPE` *filespec* `[NO PAGE]`
displays the contents of the file with the given file specification continuously. (**Note:** This requires the companion TYPE.COM utility to be on the search path.)

If no file is found with the given file specification, the message `No File` is displayed.

This command is described in Section 2.11 ('Listing a file')

USER — Built-in command

Sets the user number, with the result that all files subsequently created are assigned this user number and access is restricted to files with this number and to system files with user number 0.

The user number may take any value between 0 and 15. The default value is zero. However, the numbers 8...15 should not be applied to files stored on discs which are also written to by LocoScript software as this labelling could be misinterpreted and the files deleted.

The current user number setting is reflected in the current system prompt.

USER *number*

changes the current user number to *number*. If no number is specified, a screen message appears that asks for the required number. The system responds with a modified system prompt.

Example

```
A>USER 3
3A>
```

changes the current user number from its default value of 0 to 3. Newly created files will be stored under this user number and the user now only has access to files with this user number and system files with user number 0. Note the changed system prompt.

This utility is described in Section 2.12 ('Organising your discs').

XREF — Utility

Produces a file containing a cross reference summary of the variable usage in an assembler program from the PRN and SYM files produced by prior operation of the MAC or RMAC utility on this program.

This utility is not covered any further in this manual.

Mallard BASIC

The Mallard BASIC supplied with your PCW is Locomotive Software's high-performance BASIC interpreter. Its job is to execute commands written in the programming language called BASIC.

BASIC was originally designed many years ago as a programming language that was easy to learn. Mallard BASIC is one of many different versions of BASIC that are available today, each providing a slightly different range of facilities. Mallard BASIC is a particularly good BASIC to use because

- versions are available that you can use a wide range of computers – not just on the PCW range, but also on the IBM PC and PC compatibles such as the Amstrad PC1512 and 1640. You can also use it on most computers that run the CP/M operating system, such as the Amstrad CPC6128
- programs written to work with the industry standard version of BASIC can be executed by Mallard BASIC with little or no modification
- it provides a much more extensive range of facilities than are included in the industry standard version of BASIC
- it is one of the speediest BASIC interpreters available (Indeed this is why it is called Mallard – after the holder of the world speed record for steam locomotives)

Uses for Mallard BASIC

If you want, you can use Mallard BASIC simply as a highly sophisticated calculator. You can 'ask' it questions like `? 1784 * LOG(64)`, press [RETURN] and it will display the answer on the screen.

But you will get a lot more use out of it if you use Mallard BASIC to write and execute programs – that is, sequences of instructions which manipulate information.

Some programs do mathematical calculations for you – not just adding, subtracting, multiplying and dividing numbers but also applying a range of arithmetic functions like COS, SIN, LOG, EXP etc. Such programs can be used to do anything from simple tasks such as adding up columns of figures to really quite complex data analysis.

Other programs are designed to manipulate text. For example, you might have a program that you use to search through and update phone lists or personnel files containing information like people's National Insurance numbers and their birthdays. Text processing, of course, uses very different actions to arithmetic – for example, combining sections of text, replacing pieces of text by new text, picking out short strings of characters from long lengths of text, and generating strings of special characters – but they can still be built into a BASIC program. The RPED text editor that you may well have used to prepare simple SUBMIT files is, in fact, a BASIC program.

You can also have programs that manipulate both numbers and text – for example, business accounting programs or programs that keep Stock records up to date.

The programs to carry out these various tasks can either be written by yourself (once you have learnt how to program in Mallard BASIC) or written by someone else. For example, you could type in and use programs that are published in books and magazines.

If you have programmed in BASIC before, you should find it straightforward to convert your programs to run under Mallard BASIC. You will find details of the commands that are available in Mallard BASIC in Section 2, below.

If you haven't programmed in BASIC before, you will need to study a book that explains how to program in BASIC. We unfortunately don't have the space in this User Guide for a tutorial in BASIC programming. However, don't let the idea of having to buy a book put you off programming in BASIC. Even quite complex tasks only require very simple programs to carry them out – as you will see when we show you how to use the example programs we've supplied on disc.

Whether you are an experienced user of BASIC or have never programmed before, the book to get if you want to get the best out of Mallard BASIC is *'Mallard BASIC: Introduction and Reference'* (published by Locomotive Software and marketed by AMSTRAD). This gives both a very thorough tutorial in using Mallard BASIC and full details of the commands. (The programs supplied on the disc are, in fact, the example programs that go with the tutorial part of this book.)

1. Using Mallard BASIC

The version of Mallard BASIC supplied on your discs runs under the CP/M operating system, so to use it you have first to load CP/M and then Mallard BASIC itself. Once Mallard BASIC is in memory, it is ready for you either to type individual BASIC instructions like the ? 1784 * LOG(64) [RETURN] instruction we mentioned earlier (this is called using BASIC in its Direct Mode) or to prepare and run programs.

The fundamental difference between typing instructions for BASIC to execute in Direct Mode and typing instructions to go into a program is that you start any instruction that's to be added to a program with a number. If you want a command to be executed in Direct Mode, you just type the command. If a number starts an instruction, this is the instruction's line number and it tells BASIC where the instruction fits into the program. Whichever order you type these lines, BASIC stores them and obeys them in the order of their line numbers.

When you have finished using BASIC, you can type a simple command to leave BASIC. This returns you to the CP/M prompt and you can then use other applications that run under the CP/M operating system.

Loading Mallard BASIC, running and listing programs, and returning to CP/M are described below.

1.1 Loading Mallard BASIC

Before you can load BASIC, you need to have loaded CP/M as described at the beginning of this part of the user guide (page 365).

Once CP/M has been loaded, you load BASIC by inserting the disc holding your copy of Mallard BASIC (ie. the CP/M Start-up disc) in Drive A and typing:

BASIC [RETURN]

Note: If you've just loaded CP/M, this disc will already be in the drive.

If you are a newcomer to BASIC, we suggest you do this now – because then you can run the simple example programs we have put on the CP/M disc and see what programming in BASIC is all about.

After a few seconds, the screen should display a message similar to the following, confirming that BASIC has been loaded:

```
Mallard-80 BASIC with Jetsam   Version 1.38
(c) Copyright 1984 Locomotive Software Ltd
All rights reserved

nnnn free bytes

Ok
```

Once this message has been displayed, you have access to all the facilities of Mallard BASIC. The Ok is the 'prompt' BASIC uses to tell you that it is ready for you to give it an instruction. You can now use it to carry out calculations – or you can prepare and run programs.

1.2 Loading a BASIC program

Before you can use or change a program, you have to read it into memory. This is known as 'loading' the program. Once you have loaded Mallard BASIC, you can load a program by typing a LOAD command as follows:

LOAD "*program-name*" [RETURN]

So, for example, to load the example program stored on Drive A as DEMO.BAS (all BASIC programs are stored in files with the filetype .BAS), you type the command:

LOAD "A:DEMO" [RETURN]

Once program has been loaded, you can run it, list it or change it as described below.

(The other example programs on the disc – EXAMPLE1.BAS, etc. – are designed to be used with 'Mallard BASIC: Introduction and Reference'.)

1.3 Running a BASIC program

Once you have loaded a program, you can run it by typing the simple command:

RUN [RETURN]

Do this now to see the demonstration program. When it has finished, you will see the Ok prompt again.

• If you want, you can load and run programs in one step by typing a different type of RUN command as follows:

RUN "*program-name*" [RETURN]

So to load and run DEMO.BAS , you could type the command:

RUN "A:DEMO" [RETURN]

The program is then loaded into memory and executed. When it has finished, you can run another program by typing another RUN "*program-name*" command – or you can list the program you have just run or edit it, as described below.

• If you want to use BASIC specifically to run a particular BASIC program, then you can load BASIC and run the program all in one step.

Suppose the program you wanted to run was MYPROG.BAS and it is stored on Drive A. To both load BASIC and run MYPROG, you would load CP/M and then type:

BASIC A:MYPROG RETURN

After a few seconds, you would first see the message confirming that BASIC has been loaded. Then BASIC goes straight into running your program.

1.4 Listing a program

When you want see the details of the program that you have just run, type the command:

LIST RETURN

BASIC then displays your program on the screen.

Type this command now to see what commands were used in the demonstration program you have just run – and, indeed, quite how simple a program this is.

• If the program is more than about 30 lines long, you won't be able to see all the program on the screen at the same time. In this case, you might use the command LLIST RETURN instead. This prints a complete listing of your program on your printer.

1.5 Changing a program

When a program doesn't work how you want it to, you will need to:

- add new program lines
- delete program lines you no longer want
- change some of the existing program lines
- save the new program

To add lines, you just type the new program line: BASIC automatically slots this line into the program in the right place for the line number you give it.

To delete lines, type the line number of the line you want to delete and then press [RETURN]. For example, to delete line 400, you would type:

```
400 [RETURN]
```

To change a line, type the command EDIT followed by the line's line number and then press [RETURN]. For example, to change line 400, you would type:

```
EDIT 400 [RETURN]
```

BASIC then displays the complete line – leaving the cursor at the beginning of the instruction. To change this line, use the [←] and [→] Cursor keys to move to the part of the line you want to change, rub out characters you no longer want with the Delete keys and type in the corrections. When you have finished, press [RETURN]: BASIC then remembers the new program line.

To save the program you have changed, type:

```
SAVE "program-name"
```

1.6 Returning to CP/M

When you want to use a different language or application, you must leave BASIC and return to CP/M. To do this, type:

```
SYSTEM [RETURN]
```

To use BASIC again, you will have to load it again as described above.

2. Mallard BASIC Commands and Functions

This section gives brief descriptions of the commands that are available in Mallard BASIC. The commands are presented in groups, to give an idea of their purpose and to place them in context.

The idea of this section is to give you a good idea of the scope of the commands available in BASIC and to help people who have previously programmed in a different version of BASIC to run their existing programs under Mallard BASIC.

• Throughout this section, wherever you should put the details of an expression, the name of a variable or a constant, we have put a brief description of the item that is required. For example, where we have written *program-name*, you might put "MYPROG". This description is always printed in italic (ie. slanted) text, with hyphens between the words if more than one word is used to describe a single item.

2.1 Creation of Programs

AUTO, DELETE, EDIT, LIST, LLIST, NEW, RENUM, SAVE

The commands in this group are all useful when preparing a new program, or amending an existing one.

AUTO *line-number*, *increment* is an aid to the entry of a new section of program. It generates line numbers as the new program lines are entered. If you miss out the *line-number*, BASIC will start at 10; if you don't specify the *increment*, 10 will be assumed. Press STOP to abandon automatic line-numbering.

DELETE *line-number-range* removes lines of program en masse.

EDIT *line-number* allows the given line to be amended.

LIST *line-number-range* and LLIST *line-number-range* produce listings of the part of the program you specify to the console or to the line printer, respectively. If you miss out the *line-number-range*, then all of the program will be listed.

NEW clears the program area, ready for a new program to be entered.

RENUM *new-line-number*, *old-line-number*, *increment* allows all or part of a program to be renumbered. References to lines in GOTO and GOSUB statements are also updated. If you don't specify the *old-line-number*, BASIC will renumber the whole program. If you don't specify the *new-line-number*, the first line being renumbered will become line 10. If you don't specify the *increment*, 10 will again be assumed.

SAVE *filename-expression* allows the current program to be written to a file. What is stored is normally a copy of the internal form of the program. If you want to store an ASCII version of the program, follow the filename with ,A

2.2 Loading and Running of Programs

CLEAR, CHAIN, CHAIN MERGE, COMMON, COMMON RESET, FRE, HIMEM, LOAD, MEMORY, MERGE, RUN

CLEAR clears away all variables, closes all files and generally resets BASIC, except that the current program is retained. The memory available to BASIC, the size of stack to be used, the maximum number of files and the maximum random record size may be changed at this point by following CLEAR with a list of the new details. (List the parameters in the order given for the MEMORY command, below.)

MEMORY *high-memory, stack-size, number-of-files, maximum-record-length* allows the memory available to BASIC, the size of stack to be used, the maximum number of files and the maximum random record size to be changed.

The HIMEM function returns the address of the highest byte in memory used by BASIC.

The FRE function is used to determine the amount of free memory. FRE(0) simply returns the amount of memory that remains unused by BASIC. However, this does not include any areas that have been used but have since become free; these areas cannot be used until a 'garbage collection' is performed. FRE("") starts by forcing BASIC to 'garbage collect' and so returns the maximum free space available.

CHAIN *program-name, line-number*, ALL and CHAIN MERGE *program-name, line-number*, ALL, DELETE *line-number-range* enable one progam to load and enter another. With CHAIN MERGE all or part of the current program may be retained. Variables may be retained past CHAIN or CHAIN MERGE – all may be retained (by including ALL in the command), or only those specified in COMMON statements. At any time COMMON RESET will dispose of all variables not specified in COMMON statements.

MERGE *program-name* allows a program on disc to be merged into the current program.

LOAD *program-name* discards the current program and variables and resets all other status. A new program is then loaded, and may be entered at once.

The command which tells BASIC to execute a program is RUN. The simplest RUN command starts executing the current program. Other forms of the command cause execution to start at a given line number (RUN *line-number*) or are similar to LOAD (RUN *program-name*).

2.3 Program Termination

END, SYSTEM

Programs stop and return to Direct Mode after the last line has been executed. END may be used to terminate the program at some other point, or points.

The SYSTEM command causes BASIC to stop executing, close all files, and return to the System level.

2.4 Miscellaneous

DEF FN, OPTION RUN, OPTION STOP, REM, VERSION

DEF FN*name*(*parameters*)=*expression* defines a function. The function is invoked by using FN*name*(*parameters*) as an argument in an expression. The function returns a simple value.

OPTION RUN disables the actions of Control-C and Control-S, which normally stop or suspend the current program. OPTION STOP enables these actions.

REM *rest-of-line* allows comments to be included in the program. BASIC ignores the rest of the line after the REM.

VERSION(*number*) is a function which returns information about the version of BASIC, about the operating system and so on. The numbers to use are 0...4 and they give different types of information about the BASIC.

2.5 Control Structures

FOR, GOSUB, GOTO, IF, ON x GOSUB, ON x GOTO, RETURN, WHILE

BASIC supports two forms of loop:

- FOR *variable=start* TO *end* STEP *step-size* ... NEXT
- WHILE *logical-expression* ... WEND

A FOR loop has a control variable associated with it, which steps through a range of values – one per iteration – until a given end value is reached. The size of each step may be specified, including negative steps. The FOR loop is skipped if the initial value of the control variable exceeds the end value. NEXT marks the end of a FOR loop. A WHILE loop repeats until the given condition becomes false. The WHILE loop is skipped if the condition is false the first time. WEND marks the end of a WHILE loop. FOR and WHILE loops may be nested in any combination.

IF *logical-expression* THEN *command* ELSE *command* (or alternatively, IF *logical-expression* GOTO *line-number* ELSE *command*) may be used to choose alternative or optional actions. IF is followed by a logical expression. If the expression yields a non-zero value the THEN part is chosen, otherwise the ELSE part is chosen (if there

is one). Both the THEN and ELSE parts may contain more than one command, but they must all be on the same line with the IF command. IF commands may be nested on the same line.

BASIC supports simple subroutines. GOSUB *line-number* calls the subroutine that starts at the line given. RETURN terminates the subroutine, and returns control to the next command after the matching GOSUB. All variables in BASIC are global. Subroutines may recurse.

GOTO *line-number* causes an unconditional jump to the given line.

ON *expression* GOSUB *line-numbers* and ON *expression* GOTO *line-numbers* evaluate the integer expression, and use the result to choose one out of a list of lines to call or jump to.

2.6 Variables

DEFINT, DEFSNG, DEFDBL, DEFSTR, DIM, ERASE, OPTION BASE, SWAP, VARPTR

Where a variable or function name is given without an explicit type marker BASIC assumes a type. The type assumed depends on the first character of the name (which is an alphabetic character). DEFINT *letter-range*, DEFSNG *letter-range*, DEFDBL *letter-range* and DEFSTR *letter-range* may be used to define the default type for each letter. Note that these default settings may be changed at will, and the potential for confusion is enormous!

Unless otherwise explicitly declared in a DIM command, the maximum for each subscript of an array is set to 10 by the first use of the array (implicit declaration). The minimum for each subscript of an array may be set by an OPTION BASE command to 0 or 1, but defaults to 0 otherwise. It is an error to attempt to change this base value once it has been set, or once an array has been declared (explicitly or implicitly).

SWAP *variable,variable* exchanges the contents of two variables, without requiring an intermediate variable.

VARPTR(*variable*) returns the address of a variable, so that it can be passed to an external function or subroutine.

Arrays may occupy large areas of memory. ERASE *arrays* may be used to reclaim the memory used by arrays which are no longer in use.

2.7 Console I/O

INKEY$, INPUT, INPUT$, LINE INPUT, POS, PRINT, WIDTH, WRITE, ZONE,OPTION PRINT, OPTION INPUT, OPTION NOT TAB, OPTION TAB

The INKEY$ function fetches a single character from the keyboard, if one is available. INKEY$ does not reflect the character to the console, and may be used in special purpose input routines.

INPUT *prompt;variables* fetches a line from the console, and may interpret parts of it as numeric input and parts as strings, depending on the parameters of the INPUT command.

INPUT$(*number-of-characters*) is similar to INKEY$, except that a given number of characters are fetched from the keyboard and INPUT$ waits until that number have been typed.

LINE INPUT *prompt;variable* fetches a line from the console without interpretation (but with line imaging) and assigns it to a string variable.

PRINT USING *format-template; list of items* outputs numbers and strings to the console. The keyword USING introduces a *format-template*, which controls the output of all further numbers and strings, without reference to print zones. Without the USING clause, numbers are output "free format". PRINT divides the console into "print zones" which impose some order on the output. The ZONE *integer-expression* command may be used to change the size of print zones. TAB (*print-position*) and SPC (*number-of-spaces*) in the print list print the required number of spaces.

WRITE *list of items* outputs numbers and strings to the console, inserting commas between each item and enclosing strings in double quotes. Numbers are output in "free format".

All output to the console interacts with the console width, as set by a WIDTH *width* command (the default width is 90). BASIC will start a new line in order to keep the console position within the console width. The current position across the console is returned by the POS(*numeric-expression*) function. If the console itself starts new lines after a given column position, WIDTH may be used to inform BASIC, so that unnecessary new lines can be avoided.

OPTION PRINT=*subroutine-address* allows the user to specify the address of a

machine code subroutine which BASIC will use to send characters to the console rather than call the operating system. `OPTION INPUT=`*subroutine-address*, *subroutine-address* allows the user to specify machine code subroutines which BASIC will use to read from the keyboard.

`OPTION TAB` and `OPTION NOT TAB` allow the user to turn on and off BASIC's standard conversion of Tab (#09) characters into spaces when they are sent to the console or printer.

2.8 Line Printer Output

LPOS, LPRINT, WIDTH LPRINT, OPTION LPRINT

These commands are equivalent to the console output ones.

2.9 Files

Files are essential whenever you want to handle large amounts of information, for example, personnel records, stock lists, address lists etc. They are also needed whenever you want to share information between different programs.

Mallard BASIC can handle three different types of data file – Sequential files, Random files and Keyed files.

Sequential files just record essentially a long list of information and you have to use the information strictly in order. You can't dart about the file looking for for a particular piece of information.

Random files and Keyed files do let you pick out the information in the file in any order because each piece of information is 'tagged'. In the case of Random files, what you have to do to pick out a particular piece of information is to tell BASIC precisely where it is in the file. You do this by quoting its record number which tells BASIC how many records to count through in order to find the piece of information you want.

In a Keyed file, you pick out pieces of information by quoting one or more of the 'Keys' that have been associated with the information you want. These keys are names that you (or the person who set up the data file) have chosen to tag the information by: they are not something that is forced on you. For example, if the data file is an address list, you might have chosen to tag Fred Smith's address in Yorkshire with the Keys 'Smith' and 'Yorkshire' – so that you can pick out the full details by telling BASIC to look for Smith or Yorkshire or both Smith and

Yorkshire, as appropriate. You could also set up your program to give you a list of all the people on your address-list that live in Yorkshire. The other important feature of Keyed files is that they are automatically sorted into alphabetical order of key-name: you don't need to have a special (complicated) sorting program to do this for you.

In order to access a particular file it must be opened, at which time the access method is declared, and the disc file is associated with a *file-number*. Thereafter the file is referenced using the *file-number*. A given *file-number* may refer to only one file at a time, but may be re-used once the previous file has been closed.

Unless otherwise set in `CLEAR` or `MEMORY` commands, *file-numbers* are in the range 1...3. That is to say BASIC can handle up to three files at once.

Directory Access

DEL, DIR, ERA, FILES, KILL, NAME, OPTION FILES, REN, FIND$

The `DIR` and `FILES` *filename* commands generate directory listings to the console.

The `DEL` *filename*, `ERA` *filename* and `KILL` *filename* commands delete files from disc.

The `NAME` *filename* `AS` *new-name* and `REN` *new-name=old-name* commands rename files on disc.

The `FIND$` (*filename*) function may be used to find the full name of a given file, including any file attributes. The filename given to `FIND$` may include "wild card" characters and you can follow the *filename* with , *ordinal* to find the *n*th matching name.

`OPTION FILES` *drive-letter* and `OPTION FILES` *user-number* may be used to set the default drive and user number.

File Inspection

DISPLAY, TYPE

The `DISPLAY` *filename* and `TYPE` *filename* commands print a given file on the console.

In General

CLOSE, LOF, OPEN, RESET

The OPEN *mode*, *#filenumber*, *filename* command specifies the name of the file, the access method required, and the file number which is to be used. The modes are:

- "I" – Sequential Input
- "O" – Sequential Output
- "R" – Random Access
- "K" – Keyed Access

CLOSE *#file-number* is the inverse operation to OPEN. If the file is open for Sequential Output any data still in buffers is written away. The disc file is closed and the file number released for other use.

The RESET command closes all files on either all your drives (or on the specified drive if you use RESET *drive-letter*) and then resets the file system. A RESET command is usually required before discs are changed.

LOF (*filenumber*) gives some indication of the length of an open file. The exact value returned depends on the underlying operating system.

Input Access – Sequential

EOF, INPUT #, LINE INPUT

Input Access allows ordinary text files to be read. INPUT *#filenumber, list of variables* and LINE INPUT *#filenumber, variable* are similar to the console input commands, except that they read lines from file.

It is an error to attempt to read past the end of an input file. The EOF (*filenumber*) function may be used to detect the end of file condition, and avoid reading any further.

Output Access – Sequential

PRINT #, WRITE

Output Access allows ordinary text files to be written. PRINT *#filenumber, list of items* commands are similar to the console output commands, except that data is written to a file.

WRITE *#filenumber, list of items* commands are particularly useful for generating files to be read at some later date using INPUT #, because it produces data separated by commas and with the double quotes around strings.

Random Access

CVD, CVI, CVS, CVUK, CVIK, FIELD, GET, LOC, MID$, MKD$, MKI$, MKS$, MKUK$, MKIK$, PUT

BASIC maintains a buffer for each file open for random access. The GET *#filenumber, record-number* command reads a given record from disc into the random record buffer. The PUT *#filenumber, record-number* command writes the current contents of the random record buffer to the given record on disc. LOC (*filenumber*) returns the record number of the record referenced in the last PUT or GET operation.

Each FIELD *#filenumber, list of fields* command defines a template for the data in the random record buffer. Any number of such templates may be defined for a given file, allowing different record organisations in the same file.

In order to read and write numeric data, particularly when FIELDs are used, a mechanism is provided to convert the numeric data types to strings, and back again. MKD$ (*number*), MKS$ (*number*) and MKI$ (*number*) produce strings from Double Length, Single Length and Integer data respectively. CVD (*string*), CVS (*string*) and CVI (*string*) reconvert such strings back to numbers.

Keyed files

Keyed file handling is one of the features of Mallard BASIC that make it stand out from other BASICs, because this sort of file handling is common enough on mini-computers and mainframes but very rare indeed on microcomputers.

Keyed files allow you to access information in any order, just like 'ordinary' random access files. Their advantage is that instead of picking a record by its record number, you pick it by using any of its 'keys' – text labels that the record was tagged with when it was created or that have been added later. If you think of a file as a book, to find a topic in a random access file you must already know the page number; to find a topic in a keyed file, you just look it up in the index.

A keyed file actually consists of two files: a 'data file' and an 'index file'. The data file is essentially a random access file that holds all your information. The index file

is a special file that records all the keys in up to eight different indexes. The keys are held in these indexes in alphabetical order and stored alongside each key is the record number of the record in the data file that holds the information with this key.

As you might imagine, keyed files are ideal for personnel files and the like which you will want to scan for different types of information – for example, names, addresses, birthdays and interests.

Mallard BASIC has special commands (or special versions of commands) for all aspects of using keyed files:

- creating a keyed file – CREATE
- opening and closing the file – OPEN, CLOSE, CONSOLIDATE
- reading the record with the current key – GET
- changing existing records – PUT
- adding new records to the file – ADDREC
- adding and deleting keys – ADDKEY, DELKEY
- searching through the keys in alphabetical order – forwards or backwards SEEKNEXT, SEEKPREV, SEEKSET – and
- finding out what your current posiiton is in the file – FETCHREC, FETCHKEY$, FETCHRANK

• This is only a 'taster' of Keyed file handling because it uses special techniques that you are very unlikely to have met before. If you want to use this feature of Mallard BASIC, you really will need to study *'Mallard BASIC: Introduction and Reference'* (published by Locomotive Software).

2.10 Constant Data

DATA, READ, RESTORE

All the `DATA` *list of constants* commands in a program, taken in line number order, make up a sort of file. This 'file' may be read using `READ` *list of variables* commands. The position within this "file" may be reset by `RESTORE` *line-number* commands.

2.11 Arithmetic Functions

ABS, ATN, COS, EXP, FIX, INT, LOG, LOG10, MAX, MIN, RANDOMIZE, RND, ROUND, SGN, SIN, SQR, TAN

`ATN` (*number*), `COS` (*angle*), `SIN` (*angle*) and `TAN` (*angle*) are the usual trig functions (`ATN` is Arctangent), with angles to be expressed in radians.

EXP (*number*) returns the value of e raised to the given power. LOG (*number*) returns the natural log (base e) of its argument. LOG10 (*number*) returns the log to the base 10. SQR (*number*) returns the square root of its argument.

RND (*number*) returns the next number in a pseudo-random sequence. RANDOMIZE *integer* sets a new seed for the sequence.

MIN (*list of numbers*) takes a variable number of arguments and returns the value of the smallest. MAX (*list of numbers*) similarly returns the largest value.

FIX and INT return integral values. FIX (*number*) rounds its argument toward zero. INT (*number*) rounds its argument toward –Infinity. ROUND (*number, places*) rounds its argument to a given number of decimal places, rounding to nearest.

ABS (*number*) returns the absolute value of its argument. SGN(*number*) returns the sign of its argument.

Note: If the mathematical function you want is not listed here, you will probably be able to work it out from those supplied. If you have difficulty, you should refer to the list in the book *'Mallard BASIC: Introduction and Reference'* or to a good maths book.

2.12 String Functions

OCT$, DEC$, HEX$, INSTR, LEFT$, LEN, LOWER$, LSET, MID$, RIGHT$, RSET, SPACE$, STR$, STRING$, STRIP$, UPPER$, VAL

The LEFT$, RIGHT$ and MID$ functions return part of a string. LEFT$ (*string, number-of-characters*) returns a given number of characters counting from the left end of the string. RIGHT$ (*string, number-of-characters*) returns a number of characters counting from the right. MID$ (*string, start-position, number-of-characters*) returns a substring taken from a given position in the string.

INSTR (*start-position, string, substring*) searches one string for the first occurence of a given substring after the given start position. If the start position is omitted, then the search starts at the beginning of the string.

LEN (*string*) returns the length of the given string.

LOWER$ (*string*) returns a copy of the string, with any upper case letters replaced by their lower case equivalents. UPPER$ (*string*) similarly replaces lower case by upper case. STRIP$ (*string*) strips Bit 7 (the most significant bit) from each character.

STRING$ (*integer, character*) returns a string consisting of a given character repeated a given number of times. The character can be expressed either as "*character*" or as its internal code number. SPACE$ (*integer*) returns a string consisting of a given number of spaces.

Strings can also be manipulated through LSET, RSET and a version of MID$ that can be assigned to. LSET *string=string* replaces the contents of one string by another, filling on the right with spaces until the length is the same as the original string. RSET *string=string* has a similar result, but fills up with spaces on the left rather than on the right. MID$ (*string, start-position*) =*string* replaces a portion of its argument string by another string.

OCT$, DEC$, HEX$ and STR$ produce string representations of the value of their numeric arguments. OCT$ (*octal-number, field-size*) produces a string of octal digits; HEX$ (*hex-number, field-size*) produces a string of hexadecimal digits. STR$ (*number*) produces a free format decimal string. DEC$ (*number, format-template*) produces a formatted decimal string – with format controls similar to PRINT USING. VAL (*string*) takes a string and, interpreting it as a number in much the same way as INPUT, returns its value.

2.13 Type Conversion Functions

ASC, CHR$, CDBL, CINT, CSNG, UNT

ASC (*string*) takes the first character of a string and returns its integer value.

CHR$ (*integer*) takes an integer value and returns the corresponding character.

CINT (*number*) takes a numeric value and rounds it to the nearest integer. The result must be in the range –32768..32767.

CSNG (*number*) takes a numeric value and converts it to Single Length.

CDBL (*number*) takes a numeric value and converts it to Double Length.

UNT (*number*) takes a numeric value and converts it to an Unsigned Integer.

2.14 Machine Level Operations

CALL, DEF USR, INP, OPTION INPUT, OPTION LPRINT, OPTION PRINT, OUT, PEEK, POKE, USR, WAIT

Two forms of external subroutine are supported. CALL *variable* (*arguments*) invokes a machine code routine at the address given by the value of the variable, and passes a number of parameters to this routine. USR *digit* (*expression*) invokes a machine code function at an address previously defined by a DEF USR *digit=address* command. USR passes one parameter, and returns one value as the value of the function.

PEEK (*address*) and POKE *address*, *integer* read and write bytes of machine memory.

INP (*port-number*), OUT *port-number*, *integer* and WAIT *port-number*, *mask*, *inversion* give access to machine I/O space.

OPTION INPUT=*address*, OPTION LPRINT=*address* and OPTION PRINT= *address* allow the user to specify machine language subroutines which BASIC will use for keyboard input, printer output and console output rather than use the usual operating system calls.

2.15 Error Trapping

ERL, ERR, ERROR, ON ERROR GOTO,RESUME

When BASIC detects an error its default action is to issue an error message and return to Direct Mode. This action may be overridden by an ON ERROR GOTO *line-number* command, which sets the line number of a routine to process errors. When an error occurs ERL is set to the current line number, and ERR is set to the error number. The error processing routine may inspect these variables to decide whether it is capable of recovering or not. The RESUME *line-number* command may be used to return to normal running.

2.16 Program Development

CONT, STOP, TRON, TROFF

The STOP command halts a program in such a way that it may be restarted by CONT (provided the program is not altered in the meantime). STOP commands may be inserted in a program to halt it at interesting points so that the state of the program and variables may be examined.

TRON and TROFF turn on and off a tracing mechanism. When tracing is enabled, before each line is executed its number is printed on the console, enclosed in square brackets. This provides a simple trace of the program's execution.

3. BASIC Keywords

The following are the BASIC keywords. They are reserved and cannot be used as variable names.

ABS, ADDKEY, ADDREC, ALL, AND, AS, ASC, ATN, AUTO

BASE, BUFFERS

CALL, CDBL, CHAIN, CHR$, CINT, CLEAR, CLOSE, COMMON, CONSOLIDATE, CONT, COS, CREATE, CSNG, CVD, CVI, CVIK, CVS, CVUK

DATA, DEC$, DEF, DEFDBL, DEFINT, DEF SEG, DEFSNG, DEFSTR, DEL, DELETE, DELKEY, DIM, DIR, DISPLAY

EDIT, ELSE, END, EOF, EQV, ERA, ERASE, ERL, ERR, ERROR, EXP

FETCHKEY$, FETCHRANK, FETCHREC, FIELD, FILES, FIND$, FIX, FN, FOR, FRE

GET, GOSUB, GOTO

HEX$, HIMEM

IF, IMP, INKEY$, INP, INPUT, INPUT #, INPUT$, INPW, INSTR, INT

KILL

LEFT$, LEN, LET, LINE, LIST, LLIST, LOAD, LOC, LOCK, LOF, LOG, LOG10, LOWER$, LPOS, LPRINT, LSET

MAX, MEMORY, MERGE, MID$, MIN, MKD$, MKI$, MKIK$, MKS$, MKUK$, MOD

NAME, NEXT, NEW, NOT

OCT$, ON, ON ERROR GOTO 0, OPEN, OPTION, OR, OSERR, OUT, OUTW

PEEK, POKE, POS, PRINT, PRINT #, PUT

RANDOMIZE, RANKSPEC, READ, REM, REN, RENUM, RESET, RESTORE, RESUME, RESUME 0, RETURN, RIGHT$, RND, ROUND, RSET, RUN

SAVE, SEEKKEY, SEEKNEXT, SEEKPREV, SEEKRANK, SEEKREC, SEEKSET, SGN, SIN, SPACE$, SPC, SQR, STEP, STOP, STR$, STRING$, STRIP$, SWAP, SYSTEM

TAB, TAN, THEN, TO, TROFF, TRON, TYPE

UNT, UPPER$, USING, USR

VAL, VARPTR, VERSION

WAIT, WAITW, WEND, WHILE, WIDTH, WRITE, WRITE #

XOR

ZONE

Dr. Logo

LOGO is a powerful programming language but it is particularly easy to learn.

It was developed in the 1970s by a team of computer scientists and educators, led by Seymour Papert of the Massachusetts Institute of Technology (MIT). Their idea was to produce a language that would be easy to experiment with and so make it easy to pick up the concepts of both mathematics and computer programming.

A key feature of LOGO is the Turtle which obeys simple instructions. This is usually a character on a computer screen. Papert and his team called it a Turtle to help children using LOGO to visualise what they were giving instructions to.

On the PCW9512, LOGO is a specially customised version of Digital Research's Dr. Logo. The turtle is shown on the screen as an arrowhead.

In addition, the actions of some of the keys are set up to assist you in using Dr. Logo. This means that some keys don't have the same effect as they did while you were using LocoScript, Mallard BASIC or other CP/M software.

The basic instructions Dr. Logo understands are called Primitives. These have predefined effects. For example, `fd` instructs the turtle to move forwards, `bk` instructs it to move backwards, `rt` instructs it to turn to the right and `lt` instructs it to turn to the left.

In all, there are some two hundred primitives, not just handling movements on the screen but arithmetic and information processing as well. Their names make up Dr. Logo's basic vocabulary.

The best way to learn what sort of things you can do with the Dr. Logo primitives is to experiment with them. The next chapter encourages you to do just that.

1. Starting to use Dr. Logo

Insert your CP/M Start-up disc into Drive A and type LOGO [RETURN]. You will see a number of commands being executed to set up your PCW to run Dr. Logo, and then a 'Welcome' message will appear on your screen for a short while.

The screen then clears, leaving just a question mark in the top left hand corner of the screen. The question mark is a prompt, telling you that Dr. Logo is waiting for you to type something at your keyboard.

If instead of this, you get an error message or you do not see the commands being executed, Dr. Logo will not operate correctly. You should use DISCKIT to make a copy of your CP/M Master disc and use this new copy as the Start-up disc for use with Dr. Logo.

1.1 Directing the turtle

In the introduction, we mentioned four of Dr. Logo's primitives: `fd`, `bk`, `rt` and `lt`. Suppose we start by trying out the effect of `fd`.

Before you start a new set of turtle movements on the screen, it is good practice to clear the screen. So the first thing to type is:

`cs` [RETURN]

Now, let's see what happens when you type in:

`fd` [RETURN]

Instead of seeing the turtle move forward, as you might have expected, you have got the message:

```
Not enough inputs to fd
```

What this tells you is that Dr. Logo also needs to know how far forward. A better instruction would be `fd 60` (followed by [RETURN], of course). If this is typed in, you will see the turtle move forward 60 units from its current position, leaving a line behind it. The number `60` is said to be the Input to the primitive `fd`.

You can make the distance the turtle moves forward any number of units you like. However, for technical reasons, the smallest distance it can move across the screen is 2 units.

The number of inputs that go with a primitive depends on that primitive: some need many; others need none at all. In fact all the four movement primitives we have met so far require a number as their input.

You will see that the ? prompt is now nearer the bottom of the screen. Dr. Logo has given you most of the screen to move your turtle around in (referred to as the Graphics Screen) and a smaller text area towards the bottom of the screen (the Text Screen).

Next type in:

`rt 90` [RETURN]

You will see the turtle turns 90 degrees to the right. Follow this with:

`fd 60` [RETURN]

and a second line of the same length is drawn at right angles to the first. Notice that each movement the turtle starts from the position it was left in by the last instruction.

1.1.1 Multiple instructions

Dr. Logo lets you type in a number of instructions like `fd 60` before hitting the Return key. This means you can give the turtle a sequence of movements to make when the [RETURN] key is pressed. You could for example, combine the two instructions we have given the turtle so far into one and type:

`fd 60 rt 90` [RETURN]

From the instructions we have already given the turtle, it is easy to see that if the sequence of instructions `fd 60 rt 90` were repeated four times, the result would be a square with sides 60 units long. Dr. Logo has a shorthand for this:

`repeat 4 [fd 60 rt 90]` [RETURN]

Clear the screen again by typing `cs` [RETURN], then try this. Note that the brackets you need to type are square brackets [and]: round brackets (and) cannot be used.

Dr. Logo calls anything between square brackets a List. `[fd 60 rt 90]` is therefore referred to as an Instruction List.

Lists are a feature of LOGO: there are even special primitives that manipulate the contents of lists. But how these operate is beyond the scope of this brief introduction.

1.2 Procedures

We can make the instruction to draw this square even shorter by putting the instructions we need in a unit called a Procedure.

The instructions won't be executed at the time the procedure is set up, but they will be whenever the name of the procedure is given as part of an instruction.

Procedures take the form:

`to` *procedure-name*
series of instructions on one or more lines
`end`

We can give a procedure any name provided it isn't the name of a primitive and it doesn't start with a number. Dr. Logo will let you know if you do accidentally choose the same name as a primitive.

Suppose we call this particular one `square`. The lines to type in to set it up would be:

```
to square RETURN
repeat 4 [fd 60 rt 90] RETURN
end RETURN
```

Once this Procedure Definition has been typed in, it is stored in Dr. Logo's workspace and Dr. Logo will recognise `square` as part of its vocabulary. Then each time you give the instruction square, it will draw a square of side 60 units on the screen.

In other words, Dr. Logo now treats `square` as the name of one of its primitives. Another way of thinking about this relationship is to say that primitives are built-in procedures.

The position and orientation of the square that is drawn will depend on the position and orientation of the turtle when the instruction was given. So the sequence of instructions `square rt 45 square` will result in two squares sharing a common corner, the second inclined at 45 degrees to the first. Clear the screen again; then try it and see.

Any time you want to stop a procedure in mid execution, press STOP

1.2.1 Procedures with inputs

The procedure called 'square' we set up above always draws a square of side 60 units. A more useful procedure would be one that draws squares of different sizes to order.

Such a procedure would probably need the size of the square as an input, in exactly the same way that the primitive `fd` needed the input `60` to tell Dr. Logo to move the turtle forward 60 units.

The procedure will also have to include something in its definition that shows Dr. Logo what to do with the input you give it. This is called a Local Variable.

The procedure now has the form:

`to` *procedure-name* `:` *variable-name*
series of instructions
`end`

So the procedure to draw a square of a specified size could be:

```
to squareanysize :side
repeat 4 [fd :side rt 90]
end
```

The Local Variable we have used here is `side`

With this procedure entered into the system, we could type in:

```
squareanysize 150
```

and a square of size 150 units would appear on the screen.

As we described above, the number `150` is the input to the procedure `squareanysize`. There are two further facts to be remembered about inputs to procedures. Firstly, they do not have to be simple numbers: they can equally well be arithmetic expressions; the value of some other variable; or the name of a procedure.

For example, you might have set up a variable called `sqlength`. You would tell the procedure squareanysize to take the value of this variable as its input by typing in:

```
squareanysize :sqlength
```

Notice the colon preceding `sqlength`. It is this colon that tells Dr. Logo that `sqlength` is a variable and not a procedure to be executed after `squareanysize` has been has finished.

Secondly, procedures are by no means limited to one input. You may put as many local variables into the first line of the procedure definition as you want, provided each one is preceded by a single space and a colon. You just have to remember to include as many inputs (again separated by single spaces) in the instruction to execute the procedure as there are local variables in the first line of the procedure definition.

1.3 Variables in LOGO

A variable is an object to which a value can be assigned. In order to refer to this object, you give it a name which you put into your instructions whenever you want to do something with the value that is currently assigned to this varaiable or with the variable itself (for example, assign a new value to it).

The way you write the name of the variable in these two cases is different.

When you want Dr. Logo to process the **value** of a variable, you give its name as *:variable-name*. Each time Dr. Logo encounters *:variable-name* in the first line of the procedure it is executing, it knows that the required value will be the next input in the instruction to run the procedure. If you use *:variable-name* anywhere else, Dr. Logo will expect to find the value already set in its workspace.

Whenever you want to tell Dr. Logo to do something to the variable itself, you write its name as *"variable-name*. For example, when you want to assign a value to a variable, you use the primitive `make`. This primitive takes two inputs: the first input is the name of a variable, while the second is the value this variable is to have. This value can be a number, an arithmetic expression or the value of another variable, indicated by *:other-variable*.

The way to quote a name to Dr. Logo is to precede that name with a quote mark. Thus the instruction to make the variable `side` have the value 60 units is:

```
make "side 60
```

Both colons and quote marks are special characters as far as Dr. Logo is concerned and therefore cannot be used as part of a variable or procedure name.

1.3.1 Local and Global Variables

When we put `:side` on the first line of our procedure definition, we said `side` was a Local Variable but we didn't explain what this meant.

A Local Variable is one whose value is only made available to the procedure itself and to any procedures it calls. Once the procedure is completed, Dr. Logo cannot tell you anything about the value of that variable.

Dr. Logo also understands the idea of Global Variables, the values of which, once set for example by a `make` instruction, are maintained until changed by the program. Such variables can certainly be used in procedures and can be inputs to procedures, but they are not specified in the first line of the procedure definition.

For example, if `side` were a global variable, our procedure to draw a square of a specified size could be:

```
to squareanysize
repeat 4 [fd :side rt 90]
end
```

Notice that this procedure does not require an input.

The sequence of instructions to draw a square of side 60 units would then be:

```
make "side 60
...
squareanysize
```

The current value of a global variable is not lost once the procedure has finished. Some time after issuing the above instructions, you could find out the value of `side` by typing in `:side` after the `?` prompt. The value `60` will appear on the screen (provided you haven't changed this value in the meantime).

1.4 Editing

Procedures can, of course, be edited to correct typing mistakes or to make more basic changes.

If you want to edit a procedure that is already in Dr. Logo's workspace, start by typing `ed "`*procedure-name*. This loads the procedure with this name into the screen editor's buffer, clearing everything else out. Any text or graphics you had on the screen will be lost.

If the procedure you want to edit has just failed when you tried to execute it (and you haven't typed anything else yet), just type `ed`.

Use the cursor keys to position the cursor where you want to make a change. Any characters you then type in will be inserted into the procedure definition at the cursor position, while pressing the [←DEL] and [DEL→] keys will delete the character under the cursor and the one to the left of the cursor, respectively.

The [RETURN] key should be pressed at the end of each new line of the procedure, exactly as if you were preparing the procedure from scratch.

Other keys you may find useful while editing are:

[LINE] ([SHIFT] + [EOL])	takes the cursor to the beginning of the line
[EOL]	takes the cursor to the end of the line
[PAGE]	takes the cursor to the bottom of the present page
[ALT]+[PAGE]	takes the cursor to the top of the present page
[DOC] ([SHIFT]+[PAGE])	takes the cursor to the bottom of the procedure or set of procedures you are editing
[ALT]+[DOC]	takes the cursor to the top of the procedure or set of procedures you are editing
[ALT]+[DEL→]	erases to the end of the line, starting at the cursor
[COPY] or [PASTE]	repeats the last line you typed in at the current cursor position

Pressing the EXIT key signals to the computer that you have finished editing the old procedure and want to store the new version. Pressing the STOP key abandons the edit, leaving the procedure in its old form.

After you have finished editing, Dr. Logo returns you to a full text screen. If you want a full graphics screen, type `fs`. If you want both text and graphics areas on the screen, type `cs`.

1.5 Saving procedures

If you don't save your procedures on disc, they will be lost the moment you switch off.

Dr. Logo uses the instruction `save "`*filename* to save procedures. This puts the entire contents of its workspace onto the disc.

You have a wide choice in selecting the filename: the only restrictions are that it is not the name of any other file on the disc and that it is no more than eight characters long. However, it is good practice to choose something that reminds you of what the procedures do.

Dr. Logo won't allow you to overwrite an old set of procedures with the save instruction: it will point out that you already have a file with that filename. The way to replace an old file with an updated one of the same name is to erase the old file before saving the new one. The lines to type in to do this are:

`erasefile "`*filename* RETURN
`save "`*filename* RETURN

The instruction to restore the procedures to your workspace is:

`load "`*filename* RETURN

1.6 Using Dr. Logo

This introduction has only covered just a few of the things Dr. Logo can do. The next section tells you about many of the other primitives that Dr. Logo recognises. Experiment with these both on their own and in some short procedures. With a bit of practice, you should be able to get Dr. Logo to do some quite complex operations.

When you have finished with Dr. Logo, type bye

2. A summary of Dr. Logo primitives

The following lists of commands are designed to help you find a suitable primitive for what you want to do and then use it either directly or in a procedure. Examples are given where possible.

These lists are by no means exhaustive.

2.1 Turtle graphics

Note: The visible screen when given over entirely to graphics has the following coordinates: $x = -360...+360$ and $y = -256...+256$.

`bk` *n* — moves the turtle *n* steps **back** in the opposite direction to that in which it is pointing. For example, `bk 60` moves the turtle back 60 steps.

`fd` *n* — moves the turtle *n* steps **forward** in the direction it is pointing. For example, `fd 60` moves the turtle forward 60 steps.

`home` — returns the turtle to its **home** position.

`ht` — **hides the turtle** making it invisible. This both speeds and clarifies drawing.

`lt` *n* — rotates the turtle *n* degrees anticlockwise (to the **left**). For example, `lt 60` turns the turtle left through 60 .

`pd` — puts the turtle's **pen down** so that it resumes drawing.

`pe` — makes the turtle's **pen an eraser** erasing any lines it passes over.

`pu` — picks the turtle's **pen up** so that it stops drawing.

`rt` *n* — rotates the turtle *n* degrees clockwise (to the **right**). For example, `rt 60` turns the turtle right through 60 .

`seth` *n* — turns the turtle round so that it is **set** to an absolute **heading** based on zero vertically up. (*n* is quoted in degrees.) For example, `seth 90` turns the turtle so that it points to the right.

`setpos [n m]` moves the turtle to a **set position** specified by *n* and *m*. For example, `setpos [30 50]` moves the turtle to the position with x-coordinate 30 and y-coordinate 50. To use `setpos` with variable parameters, it must be used in the form `setpos (list :var1 :var2)`

`setx n` moves the turtle horizontally until it has a **set x-coordinate** specified by *n*. For example, `setx 30` moves the turtle across the screen until the x-coordinate of its position is 30.

`sety n` moves the turtle vertically until it has a **set y-coordinate** specified by *n*. For example, `sety 50` moves the turtle up or down the screen until the y-coordinate of its position is 50.

`st` **shows** the **turtle** (if hidden before).

`tf` gets the computer to specify the current state of the turtle in terms of its position, heading and visibility – the **turtle facts**. (xcoord,ycoord, heading, pen state, colour, visible/invisible)

`towards [n m]` gives the heading from the turtle **towards** the position on the screen specified by *n* and *m*. For example, `towards [30 50]` gives the heading to set in order to turn the turtle towards the spot with x-coordinate 30 and y-coordinate 50. The `towards` primitive is usually used in the form `seth towards [n, m]`. To use `towards` with variable parameters, it must be used in the form `towards (list :var1 :var2)`

2.2 Graphics Screens

`clean` **cleans** the graphics screen without affecting the turtle.

`cs` **cleans** the graphics **screen** and puts the turtle back to its original position.

`dot [n m]` puts a **dot** at the position specified by *n* and *m*. For example, `dot [30 50]` puts a dot on the screen at the spot with x-coordinate 30 and y-coordinate 50. To use `dot` with variable parameters, it must be used in the form `dot (list :var1 :var2)`

`fence` **fences** the turtle in, limiting it to the visible part of the graphics screen.

`fs`	makes over the **full screen** to graphics.
`setscrunch` *n*	**sets** the graphics screen's aspect ratio to *n*. *n* can take any value between 0.1 and 10. The preset value is 0.468.
`setsplit` *n*	**sets** the number of text lines in a **split** screen to *n*. For example, `setsplit 10` sets the number of text lines on the screen to 10.
`sf`	gets the computer to specify the current state of the screen – the **screen facts**.
`ss`	puts up the standard **split screen** – part graphics, part text.
`window`	allows the turtle the biggest possible **window** in which to move. This primitive therefore allows the turtle to venture outside the visible screen area after a wrap or fence instruction.
`wrap`	**wraps** the screen round so that the turtle reappears on the opposite side of the graphics screen when it attempts to cross a boundary.

2.3 Text screen

`ct`	**clears** all the **text** in the window that currently contains the cursor, leaving the cursor in its top left hand corner.
`cursor`	displays the **cursor**'s position within the text screen in terms of a column number and a line number.
`pr [`*a b*...`]`	**prints** *a b*... on the text screen, without brackets and following the last element of the list with a carriage return. For example, `pr [a b c]` causes Dr. Logo to display `a b c` on the screen.
`setcursor [`*n m*`]`	**sets** the position of the **cursor** in the text screen to column *n* and line *m*. For example, `setcursor [35 14]` moves the cursor to column 35 of line 14. To use `setcursor` with variable parameters, you must use the form `setcursor (list :`*var1* `:`*var2*`)`
`setsplit` *n*	**sets** the number of text lines in a **split** screen to *n*. For example, `setsplit 10` sets the number of text lines on the screen to 10.

`show [a b...]`	**shows** *a b...* on the text screen, with brackets and putting a carriage return after the final bracket. For example, `show [a b c]` causes Dr. Logo to display `[a b c]` on the screen.
`ss`	puts up the standard **split screen** – part graphics, part text.
`ts`	selects a full **text screen** (no graphics area).
`type [a b...]`	**types** *a b...* on the text screen, without brackets and with no carriage return after the last element in the list. For example, `type [a b c]` causes Dr. Logo to output `a b c`

2.4 Variables

`erall`	**erases all** procedures and variables from the workspace.
`ern [a b...]`	**erases** the **named** variables. For example, `ern [side size]` erases the variables `side` and `size`
`(local "a "b...)`	makes the named variables **local** to (ie. only accessible from) the current procedure or the procedures it calls. For example, `(local "side "size)` makes the variables `side` and `size` local to the current procedure.
`make "variable a`	**makes** the current value of *variable* equal to *a*. For example, `make "side 50` makes the current value of `side` equal to `50`.
`nodes`	outputs the number of free locations in the workspace (**nodes**).
`po "a`	**prints out** the value of the specified variable. For example, if `side` has the value 50, `po "side` would have the output `50`
`poall`	**prints out** the definitions of **all** the procedures and variables in the workspace.
`pons`	**prints out** the **names** and values of all the global variables in the workspace.
`recycle`	reorganises the workspace, clearing out any garbage.
`thing "a`	outputs the value of the **thing** *a*. For example, if `side` had the value 50, `thing "side` would have the output `50`

2.5 Arithmetic operations

`arctan` *n* — outputs in degrees the angle whose tangent is *n*. For example, `arctan 1` would have the output `45`

`cos` *n* — outputs the **cosine** of the angle *n* degrees. For example, `cos 60` would have the output `0.5`

`int` *n* — outputs the **integer** portion of the number *n*. For example, `int 1.33` would have the output `1`

`quotient` *n m* — outputs the result of the integer division of *n* by *m*. For example, `quotient 14 4` would have the output `3`

`random` *n* — outputs a **random** positive integer less than *n* (or zero).

`remainder` *n m* — outputs the **remainder** when *n* is divided by *m*. For example, `remainder 7 3` would have the output `1`

`round` *n* — **rounds** off *n* to the nearest integer. For example, `round 3.33` would have the output `3`, but `round 3.5` would have the output `4`

`sin` *n* — outputs the **sine** of the angle *n* degrees. For example, `sin 30` would have the output `0.5`

`+` *a b* or *a+b* — outputs the sum of *a* and *b*. For example, both `+ 2 2` and `2+2` would have the output `4`

`-` *a b* or *a-b* — outputs the result of subtracting *b* from *a*. For example, both `-10 5` and `10-5` would have the output `5`

`*` *a b* or *a*b* — outputs the result of multiplying *a* by *b*. For example, both `* 4 6` and `4*6` would have the output `24`

`/` *a b* or *a/b* — outputs the result of dividing *a* by *b*. For example, both `/ 26 5` and `26/5` would have the output `5.2`

2.6 Logical operations

`and` *a b* ... — outputs `TRUE` if statements *a* **and** *b* are both true: otherwise `FALSE`. For example, `and (3<4) (7>4)` would have the output `TRUE`

`not` *a* — outputs `TRUE` if statement *a* is **not** true and `FALSE` if it is true. For example, `not (3=4)` would have the output `TRUE`

`or` *a b...*	outputs `TRUE` if one **or** other of the statements is true and `FALSE` if none of these are true. For example, `or (3=4) (2=2)` would have the output `TRUE`, but `or (3=4) (2=1)` would have the output `FALSE`
`=` *a b* or *a=b*	outputs `TRUE` if *a* and *b* are **equal**: otherwise `FALSE`. For example, `= "yes "yes` would have the output `TRUE` but `1=2` would have the output `FALSE`
`>` *a b* or *a>b*	outputs `TRUE` if *a* is **greater than** *b*: otherwise `FALSE`. For example, `> 19 20` would have the output `FALSE` but `20>19` would have the output `TRUE`
`<` *a b* or *a<b*	outputs `TRUE` if *a* is **less than** *b*: otherwise `FALSE`. For example, `< 19 20` would have the output `TRUE` but `20<19` would have the output `FALSE`

2.7 Procedures

`.contents`	displays all the names and symbols Dr. Logo currently recognises.
`ed "`*procedure-name*	prepares to **edit** the specified procedure.
`edall`	prepares to **edit all** procedures in the workspace.
`end`	marks the **end** of a procedure definition (stands on its own on the last line).
`er "`*procedure-name*	**erases** the specified procedure. For example, `er "square` would erase the procedure called `square`
`erall`	**erases all** procedures and variables from the workspace.
`po "`*procedure-name*	**prints out** the definition of the specified procedure. For example, `po "square` would display the definition of the procedure called `square`
`poall`	**prints out** the definitions of **all** the procedures and variables in the workspace.
`pops`	**prints out** the names and definitions of all the **procedures** in the workspace.
`pots`	**prints out the titles** and inputs of all the current procedures.

`text "`*procedure-name*
displays the **text** of the specified procedure definition

`to` indicates the beginning of a procedure definition.

2.8 Flow of control

`bye` exits from the current session of Dr. Logo.

`catch "`*name a* **catches** the errors and special conditions specified by a that occur during execution of the instruction list and have been identified by a `throw` instruction with the same name.

`co` **continues** after a program enforced pause.

`error` outputs a list whose elements describe the most recent **error**.

`go "`*word* **goes** to the position in the current procedure labelled *word* and executes the following line.

`if` *a instruction-list1* executes *instruction-list1* **if** statement *a* is true: otherwise goes on to the next instruction. For example, `if a>b [pr [a is bigger]]` will output `a is bigger` if `a` is bigger than `b`

`label "`*word* **labels** the line to be executed after a `go "`*word* instruction.

`op` *a* makes *a* the **output** of the procedure and exits from the procedure at that point.

`pause` makes the execution of the current procedure **pause** (restored by `co`).

`repeat` *n* `[`*instruction-list*`]`
repeats the instruction list *n* times. For example, `repeat 4 [fd 30 rt 90]` makes the turtle move 30 steps forward and then turn right a total of four times.

`run [`*instruction-list*`]` executes the instruction list.

`stop` **stops** the execution of the current procedure.

`throw "`*name* works with a `catch` instruction of the same name to identify a special condition. It then **throws** the procedure back to the line following the `catch` command.

2.9 Word and list processing

`ascii "`*word* or `ascii [`*a b . . .*`]`
outputs the **ASCII** value of the first letter of `word` or the first character in the list. For example, `ascii "go` would have the output `103`

`bf "`*word* or `bf [`*a b . . .*`]`
outputs all **but the first** letter of `word` or the first element of the list. For example, `bf "smiles` would have the output `miles; bf [1 2 3]` would have the output `[2 3]`

`bl "`*word* or `bl [`*a b...*`]`
outputs all **but the last** letter of *word* or the last element of the list. For example, `bl "smiles` would have the output `smile; bl [1 2 3]` would have the output `[1 2]`

`char` *n*
outputs the **character** whose ASCII value is *n*. For example, `char 83` would have the output *s*

`count "`*word* or `count [`*a b...*`]`
counts the number of letters in *word* or the number of elements in the list. For example, `count "smiles` would have the output 6; `count [1 2 3]` would have the output 3

`first "`*word* or `first [`*a b...*`]`
outputs the **first** letter of *word* or the first element of the list. For example, `first "smiles` would have the output `s; first [1 2 3]` would have the output `1`

`fput "`*a* `"`*word*
outputs a new word made by **putting** *a* **first**, attached to the front of `word`. For example, `fput "s "miles` would have the output `smiles`

`fput` *a* `[`*b c...*`]`
outputs a new list made by **putting** *a* as the **first** element. For example, `fput 1 [2 3 4]` would have the output `[1 2 3 4]`

`item` *n* `"`*word* or `item` *n* `[`*a b...*`]`
outputs the *n*th **item** (letter) of *word* or the *n*th **item** of the list. For example, `item 2 "smiles` would have the output `m; item 2 [1 2 3]` would have the output `2`

`last "`*word* or `last [`*a b...*`]`
outputs the **last** letter of *word* or the last element of the list. For example, `last "smiles` would have the output `s`; `last [1 2 3]` would have the output 3

`lc "`*word* outputs the given word with any upper case characters converted to **lower case**. For example, `lc "SunShine` would have the output `sunshine`

`(list` *a b...*`)` outputs the **list** `[`*a b...*`]`. For example, `(list 1 2 3)` would have the output `[1 2 3]`

`lput "`*word1* `"`*word2* **puts** the first word **last**, thus making the new word *word2word1*. For example, `lput "cup "egg` would have the output `eggcup`

`lput "`*z* `[`*a b...*`]` **puts** the first list **last**, thus making the new list `[`*a b... z*`]`. For example, `lput 4 [1 2 3]` would have the output `[1 2 3 4]`

`se "`*word1* `"`*word2*... outputs a list with the elements *word1, word2...*, making a **sentence** out of them. For example, `se "pork "beef "lamb` would have the output `[pork beef lamb]`

`se [`*a1 b1...*`] [`*a2 b2...*`]`
outputs `[`*a1 b1... a2 b2...*`]`. For example, `se [red orange yellow] [green blue]` would have the output `[red orange yellow green blue]`

`shuffle [`*a b...*`]` outputs a list that contains the elements of the input list but **shuffled**. For example, `shuffle [1 2 3 4]` could have the output `[2 4 3 1]`

`uc "`*word* outputs the given word entirely in **upper case** (capital) letters. For example, `uc "SunShine` would have the output `SUNSHINE`

`word "`*word1* `"`*word2* outputs the new **word** *word1word2*. For example, `word "sun "shine` would have the output `sunshine`

2.10 Disc Handling

`changef "`*new-filename* `"`*old-filename*

changes the name of a **file** on the current disc. For example, `changef "box "square` would change the name of the file currently known as `square` to `box`

`dir [`*filename*`]` outputs a **directory** (list) of the Dr. Logo filenames on a drive. The primitive accepts the question mark form of Wildcard. For example, `dir` would output all the files on the default drive; `dir "a:` would output all the files on Drive `A; dir "p???????` would output the names of all files with filenames beginning with `p` on the default drive.

`erasefile "`*filename*

erases the file with the specified filename from the directory of the current disc. For example, `erasefile "myproc` would erase the file `myproc`

`load "`*filename* **loads** (ie. reads in) the named file. For example, `load "myproc` would read in the file called `myproc`

`save "`*filename* **saves** the current contents of the workspace by writing it to disc and stores it under the name *filename*. For example, `save "myproc` would store the current contents of the workspace as a file called `myproc`

`setd "`*drive-letter*`:` **sets** the **default** drive for future file handling. For example, `setd "M:` makes Drive M (the Memory Disc) the default drive.

2.11 Taking information from the keyboard

`rc` **reads** the first **character** typed at the keyboard.

`rl` **reads** in a list made up of the **line** of characters typed in at the keyboard and terminated by the Return key.

`rq` **reads** in a word or set of words (a **quote**) typed in at the keyboard and terminated by the Return key.

2.12 Controlling the printer

`copyon` starts echoing screen text on the printer.

`copyoff` stops echoing screen text on the printer.

2.13 Handling picture files

`dirpic [`*filename*`]` outputs a **directory** (list) of the **picture files** on a drive. The primitive accepts the question mark form of wildcard. For example, `dirpic "a:` would output all the picture files on Drive A; `dirpic "p???????` would output the names of all the picture files on the default drive whose filenames begin with `p`.

`loadpic` *filename* re-creates a design by **loading** the named **picture file** into memory and displaying it on the graphics screen. For example, `loadpic "mypic` would display the design stored in the file `mypic`.

`savepic` *filename* **saves** the contents of the graphics screen as a **picture** file. For example, `savepic "mypic` would save the current graphics screen as the file `mypic`.

3. The primitives supported on the PCW9512

and
arctan
ascii

bf
bk
bl
bye

catch
changef
char
clean
co
.contents
copyoff
copyon
cos
count
cs
ct
cursor

defaultd
define
.deposit
dir

dirpic
dot
dotc

ed
edall
edf
emptyp

end
er
erall
erasefile
erasepic
ern
error
.examine

fd
fence
fill
first
fput
fs

glist
go
gprop

home
ht

int
item
if
.in

keyp

label
last
lc
list
listp
load
loadpic

local
lput
lt

make
memberp

namep
nodes
noformat
not
notrace
nowatch
numberp

op
or
.out

pause
pd

pe
piece
plist
po
poall
pons
pops
pots
pprop
pps
pr
pu
px

quotient

random
rc
recycle
remainder
remprop
repeat
rerandom
rl
round
rq
rt
run

save
savepic
se
setcursor
setd
seth
setpc
setpen
setpos
setscrunch
setsplit
setx
sety
sf
show
shuffle
sin
ss
st
stop

text
tf
thing
throw
to
towards
trace
ts
type

uc

watch
where
window
word
wordp
wrap

Appendix I

CP/M Plus character sets

CP/M Plus on the PCW9512 supports a character set of 256 characters. The complete list of these characters is given in Section I.4.

Each character is known to the PCW9512 by a code, usually represented as a decimal number between 0 and 255. The character set is provided in eight different 'language' variants and the specific assignment of numbers to characters depends on the 'nationality' of the character set that is being used. In each case, the PCW9512's codes form an extended version of the industry standard ASCII character set.

The character set normally in use on the PCW9512 sold in the UK is the English character set. Details of how to change to using a different national character set are given below in Section I.1.3.

While it is possible to display all 256 characters on the screen and to process them when they are held in a file, it is not possible to type every character at the keyboard and it is not possible to print every character on your printer.

The range of characters that can be typed at any time depends on the details of the codes that the keyboard is currently set up to produce. The PCW9512 keyboard is normally set up to produce 147 characters. Forty-seven of these characters require just a single 'Character' key to be pressed. The rest are formed by pressing [SHIFT]+*key*, [ALT]+*key*, [EXTRA]+*key* or [SHIFT]+[ALT]+*key*. The key combinations are listed in Section I.1.1. Another 49 key combinations produce CP/M control codes.

The characters that can be produced on your printer depend on the printer you are using and, if it is a daisy-wheel printer, on the print wheel you have in the printer. Each print wheel typically has about 100 characters on it.

The set of characters that can be typed can readily be altered. How this done is described below in Section I.3. There are, however, some special key combinations which cannot be altered because they affect the way the PCW9512 operates. One of these is [ALT]+[ENTER] which acts as a Caps Lock key, setting/clearing the translation of all lower case characters to upper case. Another is [ALT]+[RELAY] which acts as a Num Lock key, setting/clearing the use of the cursor and other function keys as a numeric keypad. The third special combination is, of course, [SHIFT]+[EXTRA]+[EXIT] which resets the machine.

Note: Some application programs will misinterpret any character with an internal hexadecimal value greater than #7F. These characters shouldn't be used with such programs. These problems will particularly affect those wishing to use accented characters in producing foreign language texts.

I.1 The standard CP/M keyboard

I.1.1 The Character keys

The following table lists the characters that are available in the CP/M character set and the key combination of Shift keys and Character keys that is needed to type them on a PCW9512 set up as supplied. Where a character cannot be typed on the standard system, the key combination is described as 'Not set'. Keystrokes to produce such characters can be set up by using the SETKEYS utility, as described in Section I.3.

The codes given for the various characters are the codes for the English character set.

IMPORTANT: Not every character you can type at the key board can be printed on your printer. The characters available on the supplied printwheel and the key combinations used to type these are listed in Section I.2 (page 540)

Sym.	Description	Decimal value	Hex value	Key combination (Language 3)
Alphanumerics				
a...z	Lower case chars	97...122	#61...#7A	Unshifted *letter*
A...Z	Upper case chars	65...90	#41...#5A	SHIFT+*letter*
0	Zero (no slash)	127	#7F	Not set
0...9	Numerals	49...57	#31...#39	Unshifted number
æ	L. case diphthong	246	#F6	ALT+9
Æ	U. case diphthong	214	#D6	SHIFT+ALT+9
Textual symbols				
-	Hyphen	45	#2D	Unshifted -
,	Comma	44	#2C	Unshifted, or SHIFT +,
.	Full stop	46	#2E	Unshifted . or SHIFT+.
;	Semicolon	59	#3B	Unshifted ;

Sym.	Description	Decimal value	Hex value	Key combination (Language 3)
:	Colon	58	#3A	SHIFT+;
!	Exclamation mark	33	#21	SHIFT+1
?	Question mark	63	#3F	SHIFT+/
	Space	32	#20	Space bar
&	Ampersand	38	#26	SHIFT+7
'	Apostrophe	39	#27	SHIFT+6
"	Double quote	34	#22	SHIFT+2
_	Underline	95	#5F	SHIFT+-
*	Asterisk	42	#2A	SHIFT+8
#	Hash	163	#A3	Unshifted #
/	Slash	47	#2F	Unshifted /
(	Open parentheses	40	#28	SHIFT+9
)	Close parentheses	41	#29	SHIFT+0
[	Open sq. brackets	91	#5B	Unshifted [
]	Close sq. brackets	93	#5D	Unshifted]
{	Open curly bracs.	123	#7B	EXTRA+[
}	Close curly bracs.	125	#7D	EXTRA+]
@	At	64	#40	SHIFT+½
©	Copyright	164	#A4	EXTRA+C
®	Registered	190	#BE	EXTRA+R
™	Trade mark	191	#BF	EXTRA+T
§	Section	166	#A6	EXTRA+.
¶	Paragraph sign	165	#A5	EXTRA+P
†	Dagger	167	#A7	EXTRA+D
O	Open circle	187	#BB	ALT+.
•	Bullet	188	#BC	SHIFT+ALT+.

Sym.	Description	Decimal value	Hex value	Key combination (Language 3)
Currency symbols				
£	Pound	35	#23	SHIFT+3
$	Dollar	36	#24	SHIFT+4
¢	Cent	177	#B1	EXTRA+4
¥	Yen	189	#BD	EXTRA+Y
Pt	Peseta	173	#AD	EXTRA+3
f	Florin (Dutch)	176	#B0	EXTRA+F
Mathematical symbols				
+	Plus	43	#2B	SHIFT+=
–	Minus	45	#2D	Unshifted –
=	Equals	61	#3D	Unshifted =
Ø	Zero with slash	48	#30	Unshifted 0
½	Half	169	#A9	Unshifted ½ or ALT+4
¼	One quarter	168	#A8	SHIFT+[or ALT+2
¾	Three quarters	170	#AA	SHIFT+] or ALT+6
⅛	One eighth	182	#B6	ALT+1
⅜	Three eighths	183	#B7	ALT+3
⅝	Five eighths	184	#B8	ALT+5
⅞	Seven eighths	185	#B9	ALT+7
.	Decimal point	46	#2E	Unshifted . or SHIFT+.
/	Slash	47	#2F	Unshifted /
<	Less than	60	#3C	SHIFT+!
>	Greater than	62	#3E	SHIFT+#
≤	Less than or eq.	221	#DD	Not set
≥	Greater than or eq.	220	#DC	Not set
≠	Not equals	222	#DE	EXTRA+=
≅	Approx. equals	223	#DF	ALT+=
≡	Equivalent to	255	#FF	SHIFT+ALT+=
%	Percent	37	#25	SHIFT+5
‰	Per thousand	181	#B5	Not set

Sym.	Description	Decimal value	Hex value	Key combination (Language 3)
(	Open parentheses	40	#28	SHIFT+9
)	Close parentheses	41	#29	SHIFT+0
[	Open sq.brackets	91	#5B	Unshifted [
]	Close sq. brackets	93	#5D	Unshifted]
{	Open curly bracs.	123	#7B	EXTRA+[
}	Close curly bracs.	125	#7D	EXTRA+]
|	Vertical bar	124	#7C	Unshifted |
\	Backslash	92	#5C	EXTRA+ ½
#	Hash	163	#A3	Unshifted #
°	Degrees	162	#A2	EXTRA+5
↑	Exponentiation	94	#5E	EXTRA+U or EXTRA+;
Continental characters				
á	Lower case A acute	224	#E0	Not set
é	Lower case E acute	225	#E1	Not set
í	Lower case I acute	226	#E2	Not set
ó	Lower case O acute	227	#E3	Not set
ú	Lower case U acute	228	#E4	Not set
Á	Upper case A acute	192	#C0	Not set
É	Upper case E acute	193	#C1	Not set
Í	Upper case I acute	194	#C2	Not set
Ó	Upper case O acute	195	#C3	Not set
Ú	Upper case U acute	196	#C4	Not set
â	L.case A circumflex	229	#E5	Not set
ê	L.case E circumflex	230	#E6	Not set
î	L.case I circumflex	231	#E7	Not set
ô	L.case O circumflex	232	#E8	Not set
û	L.case U circumflex	233	#E9	Not set
Â	U.case A circumflex	197	#C5	Not set
Ê	U.case E circumflex	198	#C6	Not set

Sym.	Description	Decimal value	Hex value	Key combination (Language 3)
Î	U.case I circumflex	199	#C7	Not set
Ô	U.case O circumflex	200	#C8	Not set
Û	U.case U circumflex	201	#C9	Not set
à	Lower case A grave	234	#EA	Not set
è	Lower case E grave	235	#EB	Not set
ì	Lower case I grave	236	#EC	Not set
ò	Lower case O grave	237	#ED	Not set
ù	Lower case U grave	238	#EE	Not set
À	Upper case A grave	202	#CA	Not set
È	Upper case E grave	203	#CB	Not set
Ì	Upper case I grave	204	#CC	Not set
Ò	Upper case O grave	205	#CD	Not set
Û	Upper case U grave	206	#CE	Not set
ä	Lower case A umlaut	240	#F0	Not set
ë	Lower case E umlaut	241	#F1	Not set
ï	Lower case I umlaut	242	#F2	Not set
ö	Lower case O umlaut	243	#F3	Not set
ü	Lower case U umlaut	244	#F4	Not set
ÿ	Lower case Y umlaut	239	#EF	Not set
Ä	Upper case A umlaut	208	#D0	Not set
Ë	Upper case E umlaut	209	#D1	Not set
Ï	Upper case I umlaut	210	#D2	Not set
Ö	Upper case O umlaut	211	#D3	Not set
Ü	Upper case U umlaut	212	#D4	Not set
Ÿ	Upper case Y umlaut	207	#CF	Not set
ã	Lower case A tilde	250	#FA	Not set
ñ	Lower case N tilde	249	#F9	Not set
õ	Lower case O tilde	251	#FB	Not set
Ã	Upper case A tilde	218	#DA	Not set
Ñ	Upper case N tilde	217	#D9	Not set

Sym.	Description	Decimal value	Hex value	Key combination (Language 3)
Õ	Upper case O tilde	219	#DB	Not set
å	Lower case A ring	247	#F7	[ALT]+8
Å	Upper case A ring	215	#D7	[SHIFT]+ [ALT]+8
æ	L. case diphthong	246	#F6	[ALT]+9
Æ	U. case diphthong	214	#D6	[SHIFT]+ [ALT]+9
ç	L. case C cedilla	245	#F5	[ALT]+,
Ç	U. case C cedilla	213	#D5	[SHIFT]+ [ALT]+,
ø	Lower case O slash	248	#F8	[ALT]+0
Ø	Upper case O slash	216	#D8	[SHIFT]+ [ALT]+0
ß	German Scharfes S	186	#BA	[EXTRA]+S or [EXTRA]+B
ª	Feminine ordinal	160	#A0	[EXTRA]+A
º	Masculine ordinal	161	#A1	[EXTRA]+O
Continental textual symbols				
´	Acute accent	179	#B3	[EXTRA]+6
^	Circumflex accent	180	#B4	[EXTRA]+7
`	Grave accent	96	#60	[EXTRA]+8
¨	Umlaut	178	#B2	[EXTRA]+2
~	Tilde	126	#7E	[EXTRA]+-
«	Open quote (Fr.)	171	#AB	[EXTRA]+l
»	Close quote (Fr.)	172	#AC	[EXTRA]+#
¿	Inverted question mark	174	#AE	[EXTRA]+/
¡	Inverted exclam. mark	175	#AF	[EXTRA]+1
Direction signs				
↑	Up arrow	94	#5E	[EXTRA]+U or [EXTRA]+;
⇒	Dble shafted rt arrow	252	#FC	Not set
⇐	Dble shafted lt arrow	253	#FD	Not set
⇔	Dble shafted l+r arrow	254	#FE	[EXTRA]+9

I.1.2 The Function and other special keys

The following table lists Control codes that the function keys and other special keys on the PCW9512 are automatically set up to produce. These settings are designed to aid your use of CP/M commands and Mallard BASIC. The ways in which these keys can be made to give different facilities is described in Section I.3.

Token	Control string	Key combination
#80	Control-C	STOP
#81	Control-Z	f1
#82	Control-Z	f2 (SHIFT + f2)
#83	Control-Q	f3
#84	Control-Q	f4 (SHIFT + f3)
#85	Control-S	f5
#86	Control-S	f6 (SHIFT + f5)
#87	Control-P	f7
#88	Control-P	f8 (SHIFT + f7)
#89	Control-G	DEL →
#8A	DEL	← DEL
#8B	Control-H	CAN
#8C	Control-U	CUT
#8D	Control-W	PASTE or COPY
#8E	Control-]	FIND
#8F	Control-F Control-B Control-B	EOL
#90	Control-F Control-B	LINE (SHIFT + EOL)
#91	Control-_	↑
#92	Control-V	+
#93	Control-A	←
#94	Control-F	→ or CHAR
#95	Control-R	RELAY
#96	Control-^	↓
#97	Control-K	ALT + DEL →
#98	Control-\	-
#99	Control-E	ALT + ↓
#9A	Control-X	ALT + ← DEL

I.1.3 The language variants

The selection of characters made available on computers sold in different countries are subject to national variations. A handful of the codes established as the standard in these countries differ from those used conventionally in the US.

These variations are supported on the PCW9512 and a special utility has been incorporated into the CP/M system to allow the user to swap between one character set and another.

The utility that enables you to change the nationality of the character set you are using is LANGUAGE. This utility is supplied on the CP/M Start-up disc. the instruction to adopt a particular language variant is LANGUAGE n, where n is the number between 0 and 7 that corresponds to required language.

Language 3 is the English character set and this is the one in force immediately after you boot the PCW9512 from the CP/M system disc. The complete list is shown in the table below.

Changing from one language to another will affect the characters generated by particular keystrokes. For example, whereas under Language 3 pressing EXTRA+2 causes an umlaut (") to be displayed, under Language 1 the displayed character will be a tilde (~) and under Language 7 it will be a curly bracket ({).

Details of the language variations are outside the scope of the manual. However, you should note that if you set a different language without modifying the codes the keyboard produces changes the range of characters you can type as follows:

Language		Adds	Loses
American	0		
French	1	á é ù è	@ { } |
German	2	ä ö ü Ä Ö Ü	[ ] { } \ |
English	3		
Danish	4		
Swedish	5	É é ö ü Ä Ö Ü	@ \ | [ ] ↑ { }
Italian	6	é à è ì ò	{ }] | ' ~
Spanish	7	ñ Ñ	\ |

I.2 The characters on the standard print wheel

The England Prestige Pica 10 print wheel supplied with your PCW9512 and other print wheels for the built-in printer each have 100 petals. The following table gives the characters available on the supplied Prestige Pica 10 print wheel along with the key combinations needed to type these characters.

Symbol	Description	Key combination
a...z	Lower case letters	Unshifted *letter*
A...Z	Upper case letters	SHIFT + *letter*
0...9	Numerals	Unshifted *number*
–	Hyphen	Unshifted –
,	Comma	Unshifted ,
.	Full stop	Unshifted .
;	Semicolon	Unshifted ;
:	Colon	SHIFT + ;
!	Exclamation mark	SHIFT + 1
?	Question mark	SHIFT + /
&	Ampersand	SHIFT + 7
'	Apostrophe	SHIFT + 6
"	Double quote	SHIFT + 2
_	Underline	SHIFT + –
*	Asterisk	SHIFT + 8
#	Hash	Unshifted #
/	Slash	Unshifted /
(	Open parenthesis	SHIFT + 9
)	Close parenthesis	SHIFT + 0
[	Open square bracket	Unshifted [
]	Close square bracket	Unshifted]
@	At	SHIFT + ½
|	Vertical bar	Unshifted |
£	Pound	SHIFT + 3
$	Dollar	SHIFT + 4

Symbol	Description	Key combination
+	Plus	SHIFT + =
½	Half	Unshifted ½
¼	One quarter	SHIFT + [
¾	Three quarters	SHIFT +]
<	Less than	SHIFT + I
>	Greater than	SHIFT + #
°	Degrees	EXTRA + 5
%	Percent	SHIFT + 5

The principal groups of characters that can't be printed using this wheel are:

- special Textual Symols like ®, §, †
- Foreign language characters
- Continental textual symbols
- Direction signs

Print wheels may be available with these characters on them. Ask your dealer for details.

I.3 Redefining the keyboard

When you load the CP/M operating system, the keyboard is automatically set up so that the key combinations given in Section I.1.1 produce the characters listed in that section. In addition, certain 'special' keys – in particular, the functions keys f1 ... f8 and 'text editing' keys like COPY, PASTE and EOL – have been set up to generate some of the CP/M Control codes. (Details of these keys and the Control codes they generate are given in Section I.1.2.)

The range of characters and codes and the key combinations you use to produce them have been selected to suit most of the CP/M applications programs that you will run on your PCW9512. However, this selection omits many characters that you may need to be able to type if, say, you want to prepare text in foreign languages and it won't necessarily suit every program that you want to run. A number of programs are designed to be used with a keyboard that is set up so that pressing a function key gives a particular action within the program. For example, WordStar could be set up so that pressing f5 deletes a line of the text, while pressing f1 moves the Cursor to the start of the line.

Alternatively, you might simply want to set up your keyboard so that pressing a function key gives you a complete CP/M command line – to save you the effort of typing this command. This can be very helpful when you want to make your applications programs easy to use by someone who may not understand CP/M.

You get these facilities by re-defining the codes that particular key combinations generate, before you run the applications program in which you want to use the new definitions.

The permitted key combinations are [SHIFT]+*key*; [ALT]+*key*; [EXTRA]+*key* or [SHIFT]+[ALT]+*key*. [SHIFT], [ALT] and [EXTRA] are known as the Shift Keys.

To re-define your keyboard, you need a file containing details of the key combinations you want to re-define and the codes you want these keys to generate when you press them. This file is known as a Key Definition File and you can have a number of these on your discs – for example, one for when you want to use your spreadsheet program and another for when you want to play a particular computer game. In fact, supplied on your CP/M Start-up disc are two ready-prepared Key Definition Files – KEYS.WP for use with WordStar, SuperCalc and other programs that use the same keyboard layout and KEYS.DRL for use when you use Dr. Logo.

We describe how to set up a Key Definition File below in Section I.3.1.

Once you have the Key Definition File you require, you put all the changes it lists into practice by using a special CP/M utility called SETKEYS. This utility is stored on the CP/M Start-up disc. Running SETKEYS sets up the keys to have the meanings specified in the file – ready for running your chosen application program. For example, the command:

```
SETKEYS KEYS.WP
```

will implement the key definitions in KEYS.WP (assuming that SETKEYS.COM is on the search path and KEYS.WP is on the default drive).

The changes implemented by running SETKEYS will stay in force until you take steps to change these key definitions again or you reset your computer. Resetting your computer automatically sets up the keyboard afresh in the standard way.

Before you run a different program, you will probably want either to return to using the standard CP/M keyboard or to implement another set of key definitions.

To return to using the standard CP/M keyboard, you run a special utility on the CP/M Start-up disc called CPMKEYS. Simply insert the CP/M Start-up disc in Drive A and type the command:

```
A:CPMKEYS
```

To implement another set of key definitions, you use another SETKEYS command as you might expect – but first, you need to restore the keyboard to the standard CP/M set of definitions as your Key Definitions file will have been set up assuming that the standard keyboard will be in use immediately before the new definitions are implemented by SETKEYS. So, in this case, you will have to first run the special CPMKEYS utility as described above and then use SETKEYS with the new Key Definitions file to implement the new definitions.

Important: You can only change the keyboard definitions in this way when you are using the CP/M operating system. The keystrokes applicable when the PCW9512 is running LocoScript cannot be changed.

I.3.1 Setting up the Key Definition File

A Key Definition File is simply a text file that contains a list of the key combinations you want to redefine and the codes that you want these key combinations to generate. Where necessary, the file also contains details of the command that you want the code to correspond to.

To see what a Key Definition file looks like, use the TYPE command to list the KEYS.WP file on the CP/M Start-up disc.

The lines of the Key Definition file that define the code that you want a particular key combination to produce, all have the form:

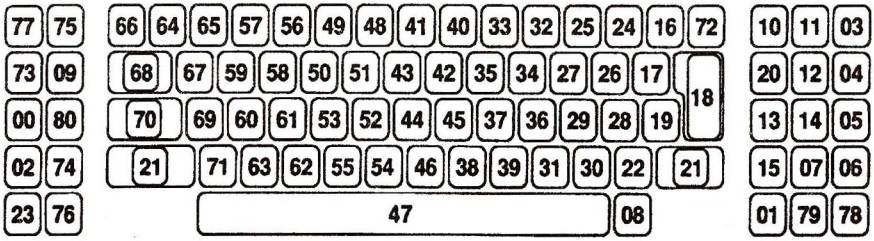
key-number shift-state code [optional-comment]

The *key-number* specifies the character or function key that you will want to use in the key combination. These key numbers are shown in the diagram on the next page From this diagram you will see, for example, that when you want to specify the [f1] function key, you use the key number 02.

The *shift-state* specifies which of the 'Shift' keys [SHIFT], [ALT] and [EXTRA] are included in the key combination. These keys are represented by a single letter - S for [SHIFT]; A for [ALT]; and E for [EXTRA], along with N for Normal or Nothing (ie. unshifted). The combination of both [SHIFT] and [ALT] is represented by SA. (Other combinations such as [SHIFT] and [EXTRA] are not allowed.)

The *code* can be specified in a number of different ways:

- If the key combination is to produce a character that you can already type, then you can enter the code as "*character*" (except when the character you want to enter is ↑ – when you type "↑↑" – or " – when you should type "↑""")



- If the key combination is to produce a character from the character set that you can't type at present, then you can enter the code as "↑'*value*'", where *value* is either the decimal or the hex value listed for the character in the table showing the complete character set (Section I.4). (**Note:**"↑'*value*'" can also be used to enter the code when the key combination is to produce a Control code. Again the value to be used is listed in the table in Section I.4. Where the value you use represents both a character and a Control code, it will depend on the program you are using whether pressing this key combination will give you a character or a Control code.)
- If the key combination is to produce a Control code that you can type by holding down the [ALT] key and pressing a character key, then you can enter the code as "↑*character*"
- If the key combination is to produce a Control code that has a special name, then you can enter the code as "↑'*name*'". These special names are listed in the table in Section I.4.
- If the key combination is to produce a string of characters and codes (for example, a complete CP/M command line), then the code is entered as "↑'*value*'" where *value* is one of the values in the range 128...158 (#80...#9E). These are the values that are available for use as Tokens to represent strings of characters and codes. In this case, you will also need another line in the file that specifies the string of characters and codes that this Token is to represent.

Note: ↑ is obtained on a standard PCW9512 by pressing [EXTRA]+U or [EXTRA]+;

The optional *comment* is any text that you care to include on the same line to remind you what the line does.

To make this clearer, we shall now look at three specific examples.

1. Suppose, you wanted to specify that the key combination [EXTRA] N should produce the character ñ.

The N key has the *key-number* 46. Combining this key with [EXTRA] means that the *shift-state* you want is E. Finally, the character you want has the *value* 249 or #F9. So the line to have in the Key Definition File would be:

```
46 E "↑'249'" Lower case N tilde
```

or, alternatively:

```
46 E "↑'#F9'" Lower case N tilde
```

2. Suppose you wanted to specify that the key combination [ALT] [RETURN] should produce a Form Feed character.

The Return key is *key-number* 18 and combining this with [ALT] means that the *shift-state* you want is A. The Form Feed character is the Control code with the *name* FF, and so the line you want in the Key Definition File would be:

```
18 A "↑'FF'"
```

(The Form Feed also has the value 12 or #0C, so you could equally well make this line `18 A "↑'12'"` or `18 A "↑'#0C'"`)

3. Suppose you wanted to specify that pressing [ALT] [f1] enters the command line that runs Mallard BASIC – ie. `BASIC` [RETURN]

The first thing to consider is which Token you will use to represent this command line. Tokens are codes with values 128...158 (#80...#9E), but the tokens with values 128...153 have already been set up so unless you want to overwrite one of these, we would suggest using another token – say 154 (#9B).

Having decided on the token you are going to use, you need a line in the Key Definition File that associates this token with the key combination you want to use. In this case the key combination is [ALT] [f1], ie. *key-number* 02 in *shift-state* A – so the line you need is:

`02 A "↑'154'"` (or, alternatively, `02 A "↑'#9B'"`)

You also need a line in the file that tells CP/M how to interpret this token. This line has the form:

E *token* "*string*"

where *token* is the value of the token you are setting and *string* is the string of characters and codes that you want the key to produce for you. Characters can be

entered in this string as *char* or ↑'*value*'; Control codes can be entered as ↑'*value*', ↑*char* or ↑'*name*'.

These two lines can appear in any order in the key definition file.

In this example, we want to make pressing [ALT][f1] (which we have already associated with token 154) produce the command line `BASIC` [RETURN]. What pressing [RETURN] does is send the Control code Control-M which is also known as CR, so the string we require is simply `BASIC↑M` or alternatively `BASIC↑'CR'` – giving us the complete line:

```
E 154 "BASIC↑M"
```

Note: The example here both associates a token with a key combination and defines the string of characters and codes associated with this token. If you want to associate one of the supplied tokens with a particular key combination, you will just need the line that specifies the key combination and the token. If you want to keep the existing token but change its meaning, you just want the line setting the expansion token to the required string.

Important: You can have a maximum of 120 characters and codes in these special strings – and the supplied set total about 30.

- Use either the supplied BASIC text editor RPED or the CP/M text editor to build up the lines of a SETKEYS Key Definitions File.

I.3.2 Making the redefined keyboard your standard

If you want to make the key definitions within a particular Key Definition file the standard as far as your machine is concerned, you can do this with the aid of the PROFILE.SUB file. All that is required is a line in that file that tells the system to run the SETKEYS utility, taking as its source your Key Definition file.

You will find more about the PROFILE.SUB file in Section 2.14 ('Personalising your system').

I.4 The complete character set

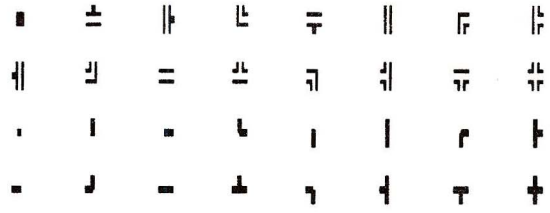
Decimal value	Hex value	Symbol	Description	Alternative meaning	Special name
0	#00	∞	Infinity	'Control-@'	NUL
1	#01	Θ	Arrow out of page	'Control-A'	SOH
2	#02	Γ	Upper case gamma	'Control-B'	STX
3	#03	Δ	Upper case delta	'Control-C'	ETX
4	#04	⊗	Arrow into page	'Control-D'	EOT
5	#05	×	Multiply	'Control-E'	ENQ
6	#06	÷	Divide	'Control-F'	ACK
7	#07	∴	Therefore	'Control-G'	BEL
8	#08	∏	Upper case pi	'Control-H'	BS
9	#09	↓	Down pointing arrow	'Control-I'	HT
10	#0A	Σ	Upper case sigma	'Control-J'	LF
11	#0B	←	Left pointing arrow	'Control-K'	VT
12	#0C	→	Right pointing arrow	'Control-L'	FF
13	#0D	±	Plus or minus	'Control-M'	CR
14	#0E	↔	Arrow pointing lt and rt	'Control-N'	SO
15	#0F	Ω	Upper case omega	'Control-O'	SI
16	#10	α	Lower case alpha	'Control-P'	DLE
17	#11	β	Lower case beta	'Control-Q'	DC1
18	#12	γ	Lower case gamma	'Control-R'	DC2
19	#13	δ	Lower case delta	'Control-S'	DC3
20	#14	ε	Lower case epsilon	'Control-T'	DC4
21	#15	θ	Lower case theta	'Control-U'	NAK
22	#16	λ	Lower case lambda	'Control-V'	SYN
23	#17	μ	Lower case mu	'Control-W'	ETB
24	#18	π	Lower case pi	'Control-X'	CAN
25	#19	ρ	Lower case rho	'Control-Y'	EM
26	#1A	σ	Lower case sigma	'Control-Z'	SUB
27	#1B	τ	Lower case tau	'Control-['	ESC
28	#1C	ϕ	Lower case phi	'Control-\'	FS

Decimal value	Hex value	Symbol	Description	Alternative meaning	Special name
29	#1D	χ	Lower case chi	'Control-]'	GS
30	#1E	ψ	Lower case psi	'Control-^'	RS
31	#1F	ω	Lower case omega	'Control-_'	US
32	#20		Space		
33	#21	!	Exclamation mark		
34	#22	"	Double quote		
35	#23	£	Pound sign		
36	#24	$	Dollar sign		
37	#25	%	Percent		
38	#26	&	Ampersand		
39	#27	'	Apostrophe		
40	#28	(	Open parenthesis		
41	#29	)	Close parenthesis		
42	#2A	*	Asterisk		
43	#2B	+	Plus		
44	#2C	,	Comma		
45	#2D	-	Minus		
46	#2E	.	Full stop		
47	#2F	/	Slash		
48	#30	∅	Zero		
49	#31	1	One		
50	#32	2	Two		
51	#33	3	Three		
52	#34	4	Four		
53	#35	5	Five		
54	#36	6	Six		
55	#37	7	Seven		
56	#38	8	Eight		
57	#39	9	Nine		
58	#3A	:	Colon		

Decimal value	Hex value	Symbol	Description	Alternative meaning
59	#3B	;	Semicolon	
60	#3C	<	Less than sign	
61	#3D	=	Equals sign	
62	#3E	>	Greater than sign	
63	#3F	?	Question mark	
64	#40	@	At	
65	#41	A	Upper case A	
66	#42	B	Upper case B	
67	#43	C	Upper case C	
68	#44	D	Upper case D	
69	#45	E	Upper case E	
70	#46	F	Upper case F	
71	#47	G	Upper case G	
72	#48	H	Upper case H	
73	#49	I	Upper case I	
74	#4A	J	Upper case J	
75	#4B	K	Upper case K	
76	#4C	L	Upper case L	
77	#4D	M	Upper case M	
78	#4E	N	Upper case N	
79	#4F	O	Upper case O	
80	#50	P	Upper case P	
81	#51	Q	Upper case Q	
82	#52	R	Upper case R	
83	#53	S	Upper case S	
84	#54	T	Upper case T	
85	#55	U	Upper case U	
86	#56	V	Upper case V	
87	#57	W	Upper case W	
88	#58	X	Upper case X	

Decimal value	Hex value	Symbol	Description	Alternative meaning
89	#59	Y	Upper case Y	
90	#5A	Z	Upper case Z	
91	#5B	[	Open square bracket	
92	#5C	\	Backslash	
93	#5D	]	Close square bracket	
94	#5E	↑	Up arrow	
95	#5F	_	Underline	
96	#60	`	Grave accent	
97	#61	a	Lower case A	
98	#62	b	Lower case B	
99	#63	c	Lower case C	
100	#64	d	Lower case D	
101	#65	e	Lower case E	
102	#66	f	Lower case F	
103	#67	g	Lower case G	
104	#68	h	Lower case H	
105	#69	i	Lower case I	
106	#6A	j	Lower case J	
107	#6B	k	Lower case K	
108	#6C	l	Lower case L	
109	#6D	m	Lower case M	
110	#6E	n	Lower case N	
111	#6F	o	Lower case O	
112	#70	p	Lower case P	
113	#71	q	Lower case Q	
114	#72	r	Lower case R	
115	#73	s	Lower case S	
116	#74	t	Lower case T	
117	#75	u	Lower case U	
118	#76	v	Lower case V	

Decimal value	Hex value	Symbol	Description	Alternative meaning
119	#77	w	Lower case W	
120	#78	x	Lower case X	
121	#79	y	Lower case Y	
122	#7A	z	Lower case Z	
123	#7B	{	Open curly bracket	
124	#7C	|	Vertical bar	
125	#7D	}	Close curly bracket	
126	#7E	~	Tilde	
127	#7F	0	Zero without a slash	DEL
128...159	#80...#9F			Expansion tokens



160	#A0	ª	Feminine ordinal	
161	#A1	º	Masculine ordinal	
162	#A2	°	Degree	
163	#A3	#	Hash	
164	#A4	©	Copyright	
165	#A5	¶	Paragraph sign	
166	#A6	§	Section	
167	#A7	†	Dagger	
168	#A8	¼	One quarter	
169	#A9	½	Half	
170	#AA	¾	Three quarters	
171	#AB	«	Open quotes (Fr.)	
172	#AC	»	Close quotes (Fr.)	

Decimal value	Hex value	Symbol	Description	Alternative meaning
173	#AD	Pt	Peseta	
174	#AE	¿	Inverted question mark	
175	#AF	¡	Inverted exclam. mark	
176	#B0	*f*	Florin	
177	#B1	¢	Cent	
178	#B2	¨	Umlaut	
179	#B3	´	Acute acent	
180	#B4	^	Circumflex	
181	#B5	‰	Per thousand	
182	#B6	⅛	One eighth	
183	#B7	⅜	Three eighths	
184	#B8	⅝	Five eighths	
185	#B9	⅞	Seven eighths	
186	#BA	β	German Scharfes s	
187	#BB	O	Open circle	
188	#BC	•	Bullet	
189	#BD	¥	Yen	
190	#BE	®	Registered	
191	#BF	™	Trade mark	
192	#C0	Á	Upper case A acute	
193	#C1	É	Upper case E acute	
194	#C2	Í	Upper case I acute	
195	#C3	Ó	Upper case O acute	
196	#C4	Ú	Upper case U acute	
197	#C5	Â	Upper case A circumflex	
198	#C6	Ê	Upper case E circumflex	
199	#C7	Î	Upper case I circumflex	
200	#C8	Ô	Upper case O circumflex	
201	#C9	Û	Upper case U circumflex	
202	#CA	À	Upper case A grave	

Decimal value	Hex value	Symbol	Description	Alternative meaning
203	#CB	È	Upper case E grave	
204	#CC	Ì	Upper case I grave	
205	#CD	Ò	Upper case O grave	
206	#CE	Ù	Upper case U grave	
207	#CF	Ÿ	Upper case Y umlaut	
208	#D0	Ä	Upper case A umlaut	
209	#D1	Ë	Upper case E umlaut	
210	#D2	Ï	Upper case I umlaut	
211	#D3	Ö	Upper case O umlaut	
212	#D4	Ü	Upper case U umlaut	
213	#D5	Ç	Upper case C cedilla	
214	#D6	Æ	Upper case diphthong	
215	#D7	Å	Upper case A ring	
216	#D8	Ø	Upper case O slash	
217	#D9	Ñ	Upper case N tilde	
218	#DA	Ã	Upper case A tilde	
219	#DB	Õ	Upper case O tilde	
220	#DC	≥	Greater than or eq.	
221	#DD	≤	Less than or eq.	
222	#DE	≠	Not equal	
223	#DF	≅	Approximately equal	
224	#E0	á	Lower case A acute	
225	#E1	é	Lower case E acute	
226	#E2	í	Lower case I acute	
227	#E3	ó	Lower case O acute	
228	#E4	ú	Lower case U acute	
229	#E5	â	Lower case A circumflex	
230	#E6	ê	Lower case E circumflex	
231	#E7	î	Lower case I circumflex	
232	#E8	ô	Lower case O circumflex	
233	#E9	û	Lower case U circumflex	

Decimal value	Hex value	Symbol	Description	Alternative meaning
234	#EA	à	Lower case A grave	
235	#EB	è	Lower case E grave	
236	#EC	ì	Lower case I grave	
237	#ED	ò	Lower case O grave	
238	#EE	ù	Lower case U grave	
239	#EF	ÿ	Lower case Y umlaut	
240	#F0	ä	Lower case A umlaut	
241	#F1	ë	Lower case E umlaut	
242	#F2	ï	Lower case I umlaut	
243	#F3	ö	Lower case O umlaut	
244	#F4	ü	Lower case U umlaut	
245	#F5	ç	Lower case C cedilla	
246	#F6	æ	Lower case diphthong	
247	#F7	å	Lower case A ring	
248	#F8	ø	Lower case O slash	
249	#F9	ñ	Lower case N tilde	
250	#FA	ã	Lower case A tilde	
251	#FB	õ	Lower case O tilde	
252	#FC	⇒	Double shafted arrow pointing right	
253	#FD	⇐	Double shafted arrow pointing left	
254	#FE	⇔	Double shafted arrow left+right	
255	#FF	≡	Equivalent	

Appendix II

Advanced use of the printer

Elsewhere in this manual, we have described how to set the printer up to handle different types of paper (see Section 2.13) and introduced some of the actions possible when the PCW9512 is in Printer Control State.

Here, we describe the Printer Control State in more detail and show you how to access special printer features such as different typestyles on the built-in printer. (In fact, many of the controls we show here could also apply to other printers that you attach to your PCW, provided these are either 630-compatible printers or dot-matrix printers that use the same control codes as an Epson FX-80 printer.)

II.1 The Printer Control State

The PCW9512's Printer Control State is used purely to control the built-in printer.

The actions that become available when the PCW9512 is in its Printer Control State are broadly those commonly provided by buttons and switches on other printers, ie. switching between On-line (ready to print) and Off-line (halted), executing additional line feeds and form feeds, and changing the print intensity. You should turn to the printer's own manual to find out how to perform these actions on any other printer you attach to your PCW.

The PCW9512 is put into its Printer Control State either when you press the [PTR] key or when you pull the Paper Load Lever on the printer towards you to start the automatic paper feed process. The computer also puts itself into Printer Control State if you try to print something while it is waiting for paper.

If the printer is in the middle of printing out some text when you press the [PTR] key, it will halt as soon as it has finished either printing the current line or moving the paper to the next print position.

When the PCW is in Printer Control State, the operations that can be carried out are indicated on a series of three lines, displayed one by one on the bottom line of your screen. Each display line is divided into a number of 'switches' by vertical bars. You move between the display lines by pressing the [↓] and [↑] Cursor keys. You set the switches by using the [←] and [→] keys to move the highlighting to the switch and then pressing the [⊞] or [⊟] key.

Each switch either tells you about the current state of the printer or outlines an operation. The precise combination of switches you see at any time depends on what state the printer is in.

Reset the printer by pressing [STOP]; leave Printer Control State by pressing [EXIT]

First Display Line

The first set of switches to be displayed cover the most common adjustments that you will make to your printer – such as switching it on or off line, advancing the printer to the top of the next sheet of paper and setting the print impression.

The first switch displays the printer is currently set up in 'Daisy' mode to work as a 630-compatible or in 'Matrix' mode to work as an Epson-compatible. Press either [+] or [-] to swap from one mode to the other. **Note:** The printer is automatically reset when it is changed from one mode to the other. This automatically resets a range of printer settings, including the Character Pitch, Line Pitch and the Top and Bottom Margins.

The second switch displays the current state of the printer. The possible messages are:

`Active`	The printer is finishing its current operation.
`Online`	The printer is ready to print when you leave Printer Control. Press [-] to put the printer Offline.
`Offline`	The printer is halted. Press [+] to put the printer Online
`Bail bar out`	The bail bar hasn't been put back against the platen after loading the paper.
`Cover up`	The dust cover over the front of the printer is sitting up. For safety reasons, the printer will not print unless this cover is down.
`Waiting for paper`	The printer has just printed a page and is waiting for the next sheet to be loaded. Loading this sheet will change the printer state to Online. If this message is given while you are using continuous stationery, this indicates that you haven't set the printer to handle continuous stationery. You should now use the PAPER utility to put this right: however, pressing [-] will temporarily clear the problem and allow you to continue printing.

`Out of paper`	There is no paper in the printer (Continuous stationery).
`Out of ribbon`	The printer has reached the end of the ribbon. Replace with a new ribbon cassette.
`No printer`	The printer is not connected. Check the printer connection, and then move to the `RESET` button and press the [+] key. If the `No printer` message is not cleared, either the printer or the PCW9512 is faulty.

The next switch only appears if the printer is either On-line or Off-line. The message will be either `at:` *n* or `at: TOF`. This gives the current position of the paper as a number of lines of text (*n*) printed with a line spacing of ⅙in. If the message is `at: TOF` (Top of Form), this means Line 1 on continuous stationery but Line 7 on single sheet stationery.

You can change the physical position of the Top of Form to the current print position by pressing [+] when the highlighting is on this switch. The printer makes the current position Line 1 (continuous stationery) or Line 6 (single sheet stationery).

LF and FF The next two switches are `LF` (for Line Feed) and `FF` (for Form Feed), provided these operations are valid. Otherwise these will be blank. Move the cursor to the relevant switch and press [+] to get the required action.

Print impression The next switch records the current setting of the print strength. There are three possible settings – `Low`, `Medium` and `High`. Press the [+] key to step through these options from `Low` to `High`, or the [-] key to step from `High` to `Low`.

The usual setting is `Medium`: set `High` if the print appears too light; set `Low` if it appears too dark.

Ribbon type The next switch records the type of ribbon that is being used – `Cloth`, `Multi-strike` or `Single strike`. Press the [+] key to step through these types from `Cloth` to `Single strike`, or the [-] key to step from `Single strike` to `Cloth`.

The final switch contains the word `RESET`. Pressing the [+] key when the cursor is over this part of the line causes most of the printer parameters to be set back to their current default values. Any text waiting to be printed is lost.

The RESET switch is automatically selected and executed if you press [STOP] at any stage while working in Printer Control State.

The parameters which are reset are:

	'Daisy'	'Matrix'
Line Pitch	6 lines per inch	6 lines per inch
Form Length	70 lines	70 lines
Top Margin	Line 1	Line 1
Bottom Margin	Line 70	Line 67
Stationery	Single sheet	Single sheet
Paper Sensor	Off	Off

These settings can be changed by using the DAISY or MATRIX utilities, or through the Defaults option of the PAPER utility (see Chapter 5).

Resetting the printer should clear any printer operation errors.

Second Display Line

The second line of switches set up the printer for the type of paper you want to use.

The first switch sets whether the paper to be used is `Single Sheet` or `Continuous`. Press [⊞] or [⊟] to change from one to the other.

Paper Length The next switch shows the length of the paper as a number of standard 6-pitch lines (Maximum length 127 lines). Press [⊞] repeatedly to increase the recorded paper length; press [⊟] repeatedly to decrease the recorded paper length.

Top Margin records the nmber of the first line of the page on which the printer will print. Press [⊞] repeatedly to increase this number; press [⊟] repeatedly to decrease this number (Range 1...127). **Note:** When the printer is being used as an Epson-compatible, the Top Margin is always Line 1.

Bottom Margin records the number of last line on the page on which the printer will print. Press [⊞] repeatedly to increase this number; press [⊟] repeatedly to decrease this number (Range 1...127).

Paper sensor The next switch indicates whether the signal from the paper sensor can halt printing. If the message is `Paper Sensor: On`, the printer will stop when it gets to within ½in of the bottom of the current sheet of paper; if it is `Paper Sensor: Off`, the signal from this sensor is ignored.

This option is only relevant when you are using continuous stationery and then you would normally set `Paper Sensor: On` so that the printer won't continue printing when it runs out of paper.

Press the [⊞] key to turn the Paper Sensor on; press the [⊟] key to turn it off.

Third Display Line

The third display line is used to set how your output is presented on the page – in particular, the character pitch and the line spacing you will be using.

The first switch sets the type of print wheel you want to use. The options are:

`Standard Wheel`	A Fixed-pitch wheel with the same set of characters as the supplied print wheel
`Standard PS`	A PS wheel with the same set of characters as the supplied print wheel
`Extra Wheel`	A Fixed-pitch wheel with the alternative set of characters that has been described to the printer.
`Extra PS`	A PS wheel with the alternative set of characters.

The 'Extra' options allow you to use a print wheel that doesn't have the same set of characters as the supplied print wheel. But before you can use this option, you must enter details of each petal on the wheel (see Section II.3.6). A Print Wheel Support Kit is available from Locomotive Software to help you prepare this information.

Press [+] to step through from `Standard Wheel` to `Extra PS`; press [-] to step from `Extra PS` to `Standard Wheel`.

Language records the national Character set used by the printer. The character sets are identified by numbers as follows:

0	US	5	Swedish
1	French	6	Italian
2	German	7	Spanish
3	UK	8	Japanese
4	Danish		

Set the language that matches the program you are using. For example, set Langauge 0 (US) if you are using a program that is set up for use on an American machine but set Language 3 if your program is set up for use in the UK – particularly if you want to print £ signs.

Press [+] to step through from 0 to 8; press [-] to step from 8 to 0.

Line Pitch shows the current spacing of the lines. The options are 6 lines per inch and 8 lines per inch. Press [+] or [-] to change from one line pitch to the other.

Pitch sets the number of characters per inch across the page. The options are 10, 12, 15, 17 and PS. Press [+] to step from 10 to PS; press [-] to step from PS to 10.

Auto LF: On means each Carriage Return is automatically accompanied by a Line Feed. When this feature is turned off, a Carriage Return simply returns the print head to the left margin. Press [⊞] to turn Auto LF on; press [⊟] to turn it off.

Hex controls whether data sent to the printer is printed as text (`Hex: Off`) or displayed as a series of internal hexadecimal codes (`Hex: On`). The more usual state is `Hex: Off`. `Hex: On` is most useful when you are debugging a program.

Press [⊞] to turn Hex display on; press [⊟] to turn it off.

II.2 Further control of printers

The other aspects of printing you may need to control are such things as the positions of the margins, tab positions and the character pitch that you use.

As a rule, you should be able to set these from within your applications program. However, this won't always be true or you will want to use specific features of your printer that your applications program cannot access for you. In this case, you may be able to select these features by using the printer's control codes directly.

You also use a printer's control codes directly when you use the SETLST utility to intitialise a printer (see Chapter 5). You may also need to know what these codes are when you are installing some software you have just bought.

What these codes are depends on the type of printer you are using. When you are using a 630-compatible daisy-wheel printer, you will need to use one set of codes. When you are using a dot-matrix printer, you will need to use a completely different set of codes.

The built-in printer is normally operated as a 630-compatible printer, responding to 630-compatible codes. However, it is also possible to operate it in a limited way as an Epson-compatible printer, responding to the Epson set of codes. When you want to use the printer as an Epson compatible, you reset it using the Epson 'Reset Printer' code: when you want to use the printer as a 630-compatible again, you reset it using the 630-compatible 'Reset Printer' code.

Section II.3 below describes how the printer is operated in 630-compatible mode, while Section II.4 describes how to operate it in Epson-compatible mode. Each section gives details of how to set the printer into this mode and lists the Printer codes available in this mode. (Other Epson-compatible codes are simply ignored.)

Some of the codes given in the following sections may also be applied to other printers that you attach to your PCW. The codes given in Section II.3 include all the standard codes recognised by 630-compatible printers, while Section II.4 includes most of the codes recognised by Epson compatible printers (though not a complete list of Epson codes because a number of features that are available on a dot-matrix printer are not available on the built-in printer – graphics, in particular). However, it is always advisable to check in the printer's own manual that the printer codes you want to use will be recognised.

II.2.1 Printer control codes

Printer control codes are of two types.

Most of the codes are referred to as Escape sequences. These start with the special character ESC. The next element in the sequence is either a single printable character or a special character like CR, which then may be followed by one or more parameters. These parameters are also single characters, *specified in this User Guide by their decimal values* (either given as the decimal value itself or represented by *n* and the range of values that *n* can take.)

Other control codes are simply special characters like FF which have specific functions. FF, for example, is the code that tells the printer to move to the top of the next sheet of paper – in other words, it tells the printer to execute a Form Feed.

You use these codes for two types of task:

- To lay-out and style text – by preceding the text by the codes needed to give it the required layout and style
- To carry out specific actions, such as starting a new page – by embedding the codes in the text where you want the action to happen

The codes are sent to the printer as groups of single characters. Precisely how you do this depends on the program you are using, but it often requires you to know either the hex value or the decimal value of each character you want to send, particularly when all you now is the character's special name (eg. ESC, CR, FF etc.). These are given in Appendix I.4.

Section II.5 explains how to use the codes given here to control your printer from within a BASIC program. How to use these codes to initialise a printer using the SETLST utility is described in Chapter 5.

The aspects of printing that you can control through Printer Control codes fall into the following areas:

- Printer initialisation – resetting the printer and clearing the print buffer
- Setting the Print mode – eg. bi-directional printing or the type of stationery
- Page format – the size of the page, margin positions and tab positions
- Text styling – Character Pitch, Character Style and Line Pitch
- Print position – horizontal movements forward and back along a line; vertical movements up and down the page
- Printer configuration – the type of print wheel, the type of printer ribbon and the print strength (630-compatible mode only)

Important: The application program from which you send Escape Sequences to the printer (or to the screen) can affect their interpretation. For example, an application that automatically converts tabs into spaces can affect any Escape Sequence that includes the value 9. (This can in fact be a problem when you are using BASIC, but it is readily solved by using the OPTION NOT TAB command.)

II.3 Using the built-in printer as a 630-compatible printer

The printer is initially set up to operate as a 630-compatible printer and to respond to the codes listed in this section. Other Escape sequences are simply ignored (with the exception of ESC @, which puts the printer into Epson-compatible mode). However, you will have to reset the printer by sending an ESC SUB I code before it can respond to these codes if the printer has been used in its Epson-compatible mode.

II.3.1 Printer Initialisation

The printer can be initialised in two ways, one of which waits until the contents of the print buffer has been printed while the other initialises the printer immediately. In the second case, any text currently in the text buffer is lost. There is also the option to 'restore' the printer after eg. a paper jam: this resets the print head.

Initialising the printer automatically clears all tab settings and print effects, and returns the following printer settings to their default values:

- All margins
- Character pitch and Line pitch
- Print mode

Note: These values are not affected by a printer restore.

The codes to use are:

ESC CR P Initialise the printer after the contents of the buffer has been printed

ESC SUB I Initialise the printer immediately

ESC SUB R Restore the printer

ESC d Make the current settings the default settings

ESC SUB I also returns the built-in printer to 630-compatible operation after it has been used as an Epson-compatible printer.

ESC SUB I and ESC SUB R have immediate effect.

Note: Resetting clears all margin and tab positions. In particular, the margins and tabs set while you were using the printer as an Epson-compatible printer are lost when you reset it ready for use as a 630-compatible printer.

II.3.2 Print mode

The printer is normally set up to handle Single Sheet stationery (with the Paper Sensor ignored), and to follow all Carriage Returns by Line Feeds so that you automatically move to the beginning of the next line (Auto CR/LF).

Other options are:

- to work in a special Graphics mode in which the print head only moves in response to specific commands to move across or down the page
- to work to the end of the current line in Print Suppression Mode in which all printable characters are automatically converted to spaces
- for Auto CR/LF to be turned off, and
- for printing to stop when the end of the paper is detected.

The Graphics mode enables you to produce output in which everything is positioned precisely where you want it to $^1/_{60}$" horizontally and $^1/_{48}$" vertically.

The codes are:

ESC 3 Enter Graphics mode

ESC 4 Leave Graphics mode

ESC 7 Enter Print Suppression mode (automatically cancelled by the next carriage return)

ESC s	Set Single Sheet stationery
ESC c	Set Continuous stationery
ESC a Y	Turn on Auto CR/LF
ESC a N	Turn off Auto CR/LF
ESC p Y	Turn on response to Paper Sensor
ESC p N	Turn off response to Paper Sensor

II.3.3 Page layout

The codes in this section set the size of paper you want to use and the positions of the margins and any tabs you require. The length of the paper is given as a number of lines of the current line spacing (see Section II.3.4).

You can set all four margins – left, right, top and bottom. These define the first and last character/line of the paper on which text is to be printed (though it is possible through using some of the positioning commands given in Section II.3.5 to print outside this area). You can also set both Horizontal tabs which define positions across the page and Vertical tabs which define corresponding positions down the page.

Initially no margins and tabs are set and the printer expects to start printing in the top lefthand corner of each page. In all cases, you set the margin and tab positions you want by moving to the required position and then sending the code that sets the margin/tab at this point.

Note: The positions you set are not affected by subsequent changes in the line pitch or the character pitch – nor are tab positions affected by changes in the margin positions. All such positions are held in memory as absolute positions.

The codes to use are:

ESC FF *n*	Set the number of lines on the page to *n*. This measures the page length in the current line pitch. For example, for 11" paper, the number to quote is 66 when you are working with 6-pitch lines but 88 when you are working with 8-pitch lines. This length is held in memory as an absolute length and so does not need to be reset when the line pitch is changed.
ESC 9	Sets the Left margin at the current position
ESC 0	Sets the Right margin at the current position

ESC T	Sets the Top margin at the current position
ESC t *n*	Sets the Top margin at line *n*
ESC L	Sets the Bottom margin at the current position
ESC b *n*	Sets the Bottom margin at line *n*
ESC C	Clears the current Top and Bottom margins, returning these to their default values.
ESC 1	Sets a Horizontal tab at the current position
ESC 8	Clears the Horizontal tab at the current position
ESC –	Sets a Vertical tab at the current position
ESC 2	Clears all Horizontal and Vertical tabs

II.3.4 Text styling

1. Character Pitch

The Character pitch (ie. the number of characters per inch along a line) is generally set by setting an Index known as the Horizontal Movement Index (HMI). This defines the distance the print head advances between printing characters, giving you a fixed character pitch. The pitch set by the HMI overrides any earlier setting, including that made on the built-in printer via Printer Control State or on other printers by setting switches.

However, proportional spacing is treated differently because the distance moved between printing characters depends on the width of the characters. Normally, proportional spacing gives you about 12 characters per inch.

However, you can change the overall pitch for Proportional Spacing by setting an Offset: this is a fixed distance (positive or negative) that the print head will move between printing each character over and above the distance fixed by the letters themselves.

Any Offset you set also affects the spacing of fixed pitch characters because the Offset is effectively added to the HMI in determining how far the print head moves.

The HMI is can be set to any number between 0 and 125. This is interpreted as a movement of $^{n}/_{120}$ inches. Its initial value is usually 12 (to give 10 pitch characters) but a different Character pitch may be set in Printer Control State (see Section II.1). (**Note:** On other 630-compatible printers, the initial value is the one set by the pitch selector.) Resetting the HMI returns it to its initial value.

The Offset can be any value between $^{-62}/_{120}$ and $^{+63}/_{120}$ inches.

Note: Changing the HMI or the Offset does not affect the position of the left and right margins or of any tabs that have been set.

The codes to use are:

ESC US *n*+1 Set the HMI to *n* (*n*=0...125)

ESC S Reset the HMI to the default value

ESC P Set Proportional Spacing

ESC Q Return to fixed pitch printing

ESC DC1 *n* Set the Offset value as follows (*n*=1...126, units of $^{1}/_{120}$"):

n	1	2	3	...	62	63	64	65	66	67	...	125	126
Offset	1	2	3	...	62	63	0	–1	–2	–3	...	–61	–62

2. Line spacing

The line spacing (ie. the distance moved between printing one line and the next) is set by setting an Index known as the Vertical Movement Index (VMI). The line spacing set by the VMI overrides any previous setting of line pitch and line spacing, made on the built-in printer via Printer Control State or on other printers by setting switches.

The VMI can be set to any value between 0 and 125. This is interpreted as a movement of *n*/48 inches. Its initial value is usually 8 (to give 6 lines per inch) but this may be set in Printer Control State (see Section II.1.) (**Note**: On other 630-compatible printers, the initial value is the one set by the line spacing selector and DIP switch controlling line pitch.)

The code to use is:

ESC RS *n*+1 Sets the VMI to *n* (*n*=0...125)

3. Text style

Printer codes can be used to style the text using the following print effects – Double-strike, Bold and Underline.

The Double-strike effect is produced by printing each character twice in the same position. The Bold effect is produced by double-striking each character, moving the carriage $^{1}/_{120}$" and then double-striking the character again. Underlining gives you continuous underlining of all printed characters and spaces, except any spaces that start or finish a line of text.

The codes to use are:

ESC O	Turns on Double-strike printing
ESC W	Turns on Bold printing
ESC &	Clears either Double-strike or Bold
ESC E	Turns on Underlining
ESC R	Clears Underlining
ESC X	Clears all print effects

II.3.5 Print position

Printer codes can be used to adjust the position of the print head both along the current line and up and down the page.

Horizontal movements

The possible movements are:

- forward or back one character width from the current position
- back one 1/120"
- forward to the next tab position
- forward or back to a specified character position
- back to the beginning of the line

Character positions are calculated in terms of the current character width (as set by the HMI – see Section II.3.4) and are measured from the lefthand edge of the page. The instruction to move to a specified character position can be used to start printing within the left and right margins.

The codes to use are:

SP	Forward one character width (as set by the current HMI)
BS	Back one character width (as set by the current HMI)
ESC BS	Back $^1/_{120}$"
HT	Forward to the next tab position (Ignored if no such tab between the current position and the right margin)
ESC HT *n*	Move to character position *n* (*n*=1...126) (NB: Ignored if HMI=0)
CR	Move to the beginning of the line

Vertical movements

The possible movements are:

- forward or back one line
- forward or back one half line
- forward to the next vertical tab
- forward or back to the specified line
- forward to the top of the next page

The width of a line is set by the current setting of the VMI (see Section II.3.4) and this width is used to determine the position of a specified line. The instruction to move to a specified line can be used to start printing above the top margin and below the bottom margin on a page.

The instruction to move the print head one half line forward (down the page) and back (up the page) can be used to print superscripts and subscripts.

The codes to use are:

LF	Move forward one line
ESC LF	Move back one line
ESC U	Move forward one half line
ESC D	Move back one half line
VT	Move forward to the next vertical tab (Ignored if no such tab between the current position and the bottom of the page)
ESC VT *n*	Move to line *n* (*n*=1...126) (NB: Ignored if VMI=0)
FF	Form feed. Move to the top of the next page.

II.3.6 Printer configuration

The printer is normally set up for the supplied Fixed pitch print wheel with the England character set, a medium print strength and a Multi-strike ribbon. Printer Control codes can be used to set it up for:

- an England PS wheel
- an 'Extra' Print wheel with a different set of characters on it
- a different national Character set
- a different Print strength (Low, Medium or High)
- a different type of Ribbon (Cloth, Multi-strike or Single-strike)

The option to set an 'Extra' print wheel allows you use print wheels other than those with the England set of characters – for example, a French wheel or a German wheel. However, before you can use this wheel, you have to specify the character on each spoke of the wheel and the hammer intensity required for this character. This information then needs to be downloaded into the printer by sending a series of Escape sequences of the form:

ESC x *language char fixed-spoke PS-spoke width hammer-intensity*

where:

language	is the national Character set being used to specify the wheel, given as the **character** *N* (*N*=0...8, or @ for the current Character set)
char	represents the character on the petal: #21...#7E for the 94 standard ASCII characters; #80...#85 for the 6 other characters on the wheel, represented elsewhere by the Escape codes ESC H, I, J, K, Y, Z, respectively
fixed-spoke	the number of the spoke bearing this character on a fixed-pitch version of this wheel (1...100)
PS-spoke	the number of the spoke bearing this character on a PS version of this wheel
width	the PS width of the character (3...8, in units of $^1/_{60}$")
hammer	the hammer intensity for this character (5...10)

These Escape sequences have immediate effect and one of these sequences is required for each petal on the wheel.

A Print Wheel Support Kit is available from Locomotive Software which helps you set up and verify the details of the characters on a print wheel.

Setting a different national Character set changes the characters associated with certain specific internal values. In particular, internal value #23 (decimal value 35) is associated with £ in the UK Character set, but with # in the US Character set. Details of these changes are given in Section II.6.

The codes to use are:

ESC w *n* Set Wheel type *n* as follows:

1 Standard Fixed-pitch wheel (England)
2 Standard PS wheel (England PS)
3 Extra Fixed-pitch wheel
4 Extra PS wheel

ESC l *N* (ESC ell *N*, not ESC one *N*) Set the national Character set *N* as follows:

0	US	5	Swedish
1	French	6	Italian
2	German	7	Spanish
3	UK	8	Japanese
4	Danish		

Note: Here *N* represents the character itself, not its decimal value.

ESC i *n* Set the Print strength (Impression) as follows:

1 Low
2 Medium
3 High

ESC r *n* Set the Ribbon type as follows:

1 Cloth
2 Multi-strike
3 Single-strike

ESC y Resets the Extra print wheel as a standard print wheel

Note: The ESC w, ESC i and ESC r sequences have immediate effect. You are advised not to have text in the print buffer when changing the print wheel as corruption may occur.

II.4 Using the built-in printer as an Epson-compatible printer

The printer is initially set up to operate as a 630-compatible printer and to respond to the codes listed in Section II.3. However, you can make it respond to codes used by Epson FX-80 compatible printers by resetting it using the Epson Reset printer code ESC @. It will then continue to respond only to Epson codes until reset again by the 630 Reset code ESC SUB I.

The built-in printer, being a daisy-wheel printer, doesn't respond to the full range of Epson Printer codes. In particular, it does not respond to any of the graphics instructions. Codes that it cannot process are simply ignored.

II.4.1 Printer Initialisation

This section gives the code used to initialise the printer. When this code is sent to the printer, all the settings are returned to their default values. These default values may be set at any time to the current settings by sending another printer code.

The printer settings that are affected are:

- The Character pitch (including whether enlarged or not)
- The default Print Effect (Bold, Double-strike, Underline or None)
- The Line Spacing
- The Page length
- The Gap at the bottom of the page
- Single sheet or continuous
- Whether printing stops when the end of the paper is detected
- Automatic line feed on/off

A separate code clears the print buffer.

The codes to use are:

ESC @	Initialises the printer, returning all settings to their default values
ESC d	Makes the current settings the default settings
CAN	Clears the print buffer

ESC @ also puts the built-in printer into its Epson-compatible mode in which it responds to the Epson set of printer codes.

Note: Resetting clears all margin and tab positions. In particular, the margins and tabs set while you were using the printer as a 630-compatible printer are lost when you reset it ready for use as a Epson-compatible printer.

II.4.2 Print mode

Codes given in this section can be used to set:

- Single sheet or Continuous stationery
- whether printing on Continuous stationery will automatically stop when the end of the paper is detected
- whether each Carriage Return is automatically followed by a Line Feed (Auto CR/LF)

These aspects of printing can also be set by using the PCW's Printer Control State.

The codes to use are:

ESC $	Set single sheet stationery
ESC c	Set continuous stationery
ESC 9	Stop when the end of the paper is detected by the Paper Sensor (NB: Applicable only to Continuous stationery)
ESC 8	Ignore the Paper Sensor (NB: Applicable only to Continuous stationery)
ESC LF	Select Auto CR/LF
ESC CR	Cancel Auto CR/LF

II.4.3 Page layout

The codes in this section set the size of paper you want to use and the positions of the margins and any tabs you require. They also set the size of the Gap between pages of continuous stationery – ie. the number of lines skipped over between the last line printed at the bottom of one page and the first line on the next page. This Gap can be used to stop the printer printing on the line of perforations between sheets of fanfold paper or on the backing paper on sheets of labels.

The margins and tabs you can set refer only to horizontal movements of the print head across the page. You cannot set (or use) Vertical tabs when the built-in printer is being used as an Epson-compatible printer.

No margins are set immediately after the printer has been reset, and the printer expects to start printing in the top lefthand corner of each page. You set the margins you want by specifying these in terms of character positions (in the current character pitch) from the lefthand edge of the page.

Initially tabs are set at every eighth character position starting from the left margin and changing the left margin automatically resets the tab positions to every eighth character. You set other tabs by listing the tab positions you want in ascending order – again in terms of character positions in the current character pitch – and you have to list all the tab positions you want. The previous settings are automatically erased.

Note: The positions you set are not affected by subsequent changes in the character pitch. All such positions are held in memory as absolute positions. Similarly, the length of the page doesn't change when the line pitch changes, although this changes the number of lines on the page.

The codes to use are:

ESC C *n*	Set the page length as *n* lines of the current line pitch (*n*=1...127)
ESC C 0 *n*	Set the page length as *n* inches (*n*=1...22)
ESC N *n*	Set the Gap to *n* lines of the current line pitch (*n*=1...127)
ESC O	Set a zero Gap
ESC l *n*	(ESC ell *n*, not ESC one *n*) Set the left margin at character position *n*
ESC Q *n*	Set the right margin at character position *n*
ESC D *[n]* 0	Set tabs at the given character positions (Interpret *[n]* as *n*1 *n*2 ..... NB: Tab positions must be listed in ascending order)
ESC D 0	Clear all tabs

Note: A maximum of 32 tabs may be set and the left margin must be at least $^1/_5$" to the left of the right margin. Setting the page length automatically resets the Gap to zero.

II.4.4 Text styling

The printer can be used to print text in a number of different styles by changing the number of characters it prints per inch along a line (the Character pitch) and by using print effects such as Bold and Underline to change their appearance.

1. Character Pitch

Four character pitches are available. These are Pica (10 characters per inch), Elite (12 characters per inch), Condensed (approximately 17 character per inch) and Proportionally Spaced. The Proportionally spaced setting prints each character the space suitable for the width of that character, so for example an i takes less space than a W. On average, Proportionally spaced text has about 12 characters per inch.

On top of this, each pitch can be 'enlarged'. The effect of enlarging is to double the width occupied by each character – so halving the number of characters per inch.

The initial pitch is 10 character per inch (Pica).

The codes to use are:

ESC M	Set 12 characters per inch (Elite)
ESC P	Clear 12-pitch, returning to 10-pitch (Pica)
SI ESC SI	Set 17 characters per inch (Condensed)
DC2	Clear 17-pitch, returning to 10-pitch (Pica)
ESC p 1	Set Proportionally spaced text
ESC p 0	Clear Proportional spacing, returning to 10-pitch (Pica)
SO ESC SO ESC W 1	Set Enlarged version of the current character pitch.
DC4	Return to normal spacing for the current character pitch after enlarging by SO or ESC SO
ESC W 0	Return to normal spacing for the current character pitch

Notes: Changing the character pitch does not affect the position of the left and right margins or of any tabs that have been set. When characters are 'enlarged' by using the SO or ESC SO code, the characters automatically return to their normal pitch after the next Line Feed or Form Feed.

2. Line spacing

The codes given here set the distance moved between printing one line and the next. This line spacing overrides any previous setting of line pitch and line spacing, made on the built-in printer via Printer Control State or on other printers by setting switches.

The initial setting is normally 6 lines per inch.

The codes to use are:

ESC 0	Lines $^1/_8$" apart (8 lines per inch)
ESC 1	Lines $^{19}/_{192}$" apart (approx 10 lines per inch)
ESC 2	Lines $^1/_6$" apart (6 lines per inch)
ESC 3 *n*	Lines $^n/_{216}$" apart (calculated to the nearest $^1/_{192}$"). *n*=0...255
ESC A *n*	Lines $^n/_{72}$" apart (calculated to the nearest $^1/_{192}$"). *n*=0...85

3. Text style

Printer codes can be used to style the text using the following print effects – Double-strike, Bold and Underline.

The Double-strike effect is produced by printing each character twice in the same position. The Bold effect is produced by double-striking each character, moving the carriage $^1/_{120}$" and then double-striking the character again. Underlining gives you continuous underlining of all printed characters and spaces, except any spaces that start or finish a line of text.

The codes to use are:

ESC G	Turn on Double-strike printing
ESC H	Turn off Double-strike
ESC E	Turn on Bold
ESC F	Turn off Bold
ESC - 1	Turn on underlining
ESC - 0	Turn off underlining

4. Selecting a mixed text style

You can also use one printer control code to set a combination of Enlarged mode, Double-strike mode, Bold mode, Condensed text, Elite text and Pica text.

The code to use is:

ESC ! *n* where *n*=0...63

Each value of *n* corresponds to a 8-bit code as follows:

Bit	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**0**
1'	(Always 0)		Enlarged	Double	Bold	Condensed	(Always 0)	Elite
'0'			–	–	–	–		Pica

Setting a mixed print mode overrides any previous settings of Pica, Elite, Condensed, Enlarged, Bold and Double-strike.

II.4.5 Print position

Printer codes can be used to adjust the position of the print head both along the current line and up and down the page.

Horizontal movements

The possible movements are:

- forward to the next tab position
- back one character width from the current position
- back to the beginning of the line

The codes to use are:

HT	Move forward to the next tab position (Ignored if the print position is already at or beyond the highest tab position)
BS	Move back one character width (as set by the current character pitch)
CR	Move back to the beginning of the current line

Note: Tabbing when the next tab position is beyond the right margin causes an automatic carriage return–line feed, taking the print head to the left margin on the following line.

Vertical movements

The possible movements are

- forward one line
- forward or back one half line
- forward a specified distance
- forward to the top of the next page

The distance moved is set by the current line spacing

The instruction to move the print head one half line forward (down the page) and back (up the page) can be used to print superscripts and subscripts.

The codes to use are:

LF	Move forward one line
ESC S 1	Move forward one half line (to set subscript)
ESC S 0	Move back one half line (to set superscript)
ESC T	Move one half line in the direction required to cancel subscript or superscript as appropriate
ESC J *n*	Move forward $^{n}/_{216}$" (calculated to the nearest $^{1}/_{192}$"). *n*=0...255
FF	Form feed. Move to the top of the next page.

II.5 Controlling the printer from a BASIC program

IMPORTANT: When using the BASIC statements described in this section, it is essential to precede these statements by:

1. OPTION NOT TAB
2. WIDTH LPRINT 255

Without these commands, your printer control instructions will not be correctly interpreted. After you have finished adjusting the printer, you will of course have to restore the correct printer width with another WIDTH LPRINT command.

To control the printer from a Mallard BASIC program, you just put the codes given here into LPRINT statements. The only complication is how you actually express a code that we have given as ESC S 0, for example.

As we explained earlier, each part of the code is a single character which we have expressed either as the character's 'name', or as the character itself (where this is a printable character like S) or as the character's decimal value – depending on the type of character we were trying to specify. In particular, ESC, VT, DC4 etc. are all the names of special characters, while any number we represented by the parameter *n* is the decimal value of the character required for the code.

The way you express the characters in your LPRINT also depends on the type of character you want to specify.

- When you want to specify a printable character like S, you insert it in the LPRINT statement as "*character*"
- When you want to specify the character that corresponds to the decimal value we quoted, you insert it in the LPRINT statement as CHR$(*value*)
- When you want to specify one of the special characters that we have given by name, then you insert it in the LPRINT statement as CHR$(*value*), where

value is the decimal value of this special character.

The decimal values corresponding to the special characters used in printer control codes are given below.

Special name	Decimal value	Special name	Decimal value
BS	8	LF	10
CAN	24	RS	30
CR	13	SI	15
DC1	17	SO	14
DC2	18	SP	32
DC4	20	SUB	26
ESC	27	US	31
FF	12	VT	11
HT	9		

So to send the special character ESC, for example, you put CHR$(27) into your LPRINT statement, while to send the special character FF, you would put CHR$(12) into the LPRINT statement.

For example, suppose that your printer is currently set to work as a 630-compatible printer and you want to set the character pitch to 12 characters per inch. When the printer is working as a 630-compatible printer, the way to set the character pitch is to set the Horizontal Movement Index and the 630 code that sets the Horizontal Movement Index is ESC US *n*. The value of *n* you want turns out to be 11.

The first two characters of the code are both special characters so we need to express both of these as CHR$(*value*) where *value* is the special character's decimal value. The value of *n* (11) is already the decimal value of the last character in the code and so that too is expressed as CHR$(*value*).

The decimal value of ESC is 27 and the decimal value of US is 31, so the three characters of the code are CHR$(27), CHR$(31) and CHR$(11) and the LPRINT statement to be used to set 12 character per inch is:

```
LPRINT CHR$(27);CHR$(31);CHR$(11)
```

II.6 The standard Print wheel under different Languages

Setting a different Language changes the character associated with particular character codes, and so changes the character that is printed in response to this code. When a standard England print wheel is fitted, the effect of changing the language is given by the following table:

	US 0	Fr 1	Ger 2	UK 3	Den 4	Swe 5	Ital 6	Span 7	Jap 8
#23 #	#	#	#	£	#	#	#	#	#
#24 $	$	$	$	$	$	$	$	$	$
#40 @	@	@	@	@	@	@	@	@	@
#5B [	[	°	[	[	[	[	°	[	[
#5C \	½	½	½	½	½	½	½	½	½
#5D]	]	]	]	]	]	]	]	]	]
#5E ^	°	[	°	°	°	°	[	°	°
#60 `	÷	÷	÷	÷	÷	÷	÷	÷	÷
#7B {	¼	¼	¼	¼	¼	¼	¼	¼	¼
#7C |	|	|	|	|	|	|	|	|	|
#7D }	¾	¾	¾	¾	¾	¾	¾	¾	¾
#7E ~	£	£	£	#	£	£	£	£	£
ESC Y	⅓	⅓	⅓	⅓	⅓	⅓	⅓	⅓	⅓
ESC Z	⅔	⅔	⅔	⅔	⅔	⅔	⅔	⅔	⅔
ESC H	·	·	·	·	·	·	·	·	·
ESC I	¸	¸	¸	¸	¸	¸	¸	¸	¸
ESC J	2	2	2	2	2	2	2	2	2
ESC K	3	3	3	3	3	3	3	3	3

Appendix III

Terminal characteristics

The CP/M Plus implementation on the PCW9512 includes a Terminal Emulator which provides facilities very similar to those of a Zenith Z19/Z29 monitor. This makes the PCW9512 screen one of the many to broadly emulate a VT52 terminal.

The terminal emulator is provided as part of the CRT physical device. This is normally attached to the CONOUT: logical device. (See the description of the DEVICE command in Chapter 5 for further details of CP/M devices.)

Use of the screen is limited to a viewport which may be all or part of the screen. The size and shape of the viewport is changed either through the ESC X sequence described below, or by selecting 24 x 80 mode or by enabling/disabling the status line.

Row and column numbers should be given relative to the top left hand corner of the viewport, with the exception of the row and column numbers needed to set a new viewport. These should be given relative to the top left hand corner of the screen.

Operations that erase text, only affect characters within the current viewport. However, scrolling the viewport can affect text outside the present viewport.

The full details of the way text is handled on the screen are as follows:

Characters with internal codes in the range 32...255 (#20...#FF in the hexadecimal notation) are displayed on the screen at the current cursor position.

Generally the cursor is then moved right by one column. However, if the cursor is at the column furthest to the right and wrapping is enabled, it will move to the column furthest to the left on the next line, the screen scrolling up if necessary. If wrapping is not enabled, the final character on the line will be overwritten.

Characters with internal codes in the range 0...31 (#00...#1F) are interpreted as control codes as follows:

7	#07	BEL (Bell)	Sounds a bleep.
8	#08	BS (Backspace)	Moves the cursor one column to the left. If the cursor is at the column furthest to the left and wrapping is enabled, it is moved to the column furthest to the right on the row above - unless it is already on the top row.

10 #0A LF (Line feed) Moves the cursor down one line, scrolling the screen up if necessary.

13 #0D CR (Carriage return) Moves the cursor to the column furthest to the left on the present row.

27 #1B ESC (Escape) Introduces an Escape sequence or a literal character.

All other control codes are ignored.

The following Escape sequences are interpreted as follows:

ESC 0 Disables the status line. The CRT may then use the bottom line of the screen. Disc system messages will appear with the CRT output.

ESC 1 Enables the status line. Disc system messages will appear on the bottom line of the screen.

ESC 2 *n* Changes the character set to one of the national variants (see Appendix I)

ESC 3 *m* This is provided only for compatibility with other Amstrad computers and is ignored.

ESC A Moves the cursor up. If the cursor is already on the top row, it has no effect.

ESC B Moves the cursor down. If the cursor is already on the bottom row, it has no effect.

ESC C Moves the cursor right one column. If the cursor is already at the column furthest to the right, it has no effect.

ESC D Moves the cursor left one column. If the cursor is already at the column furthest to the left, it has no effect.

ESC E Clears the viewport. The position of the cursor is unaffected.

ESC H Moves the cursor to its Home position, ie. row 0, column 0 - the top left hand corner.

ESC I (Reverse index) Moves the cursor up one row. The page is scrolled down if necessary.

ESC J Erases to the end of the page, including the character at the cursor position. The cursor position is unaffected.

ESC K	Erases to the end of the line, including the character at the cursor position. The cursor position is unaffected.
ESC L	Inserts a line. The row with the cursor on it and all rows below are scrolled down one line. The cursor row is cleared. The position of the cursor is unaffected.
ESC M	Deletes the line with the cursor on it. All rows below are scrolled up one line. The bottom row is cleared. The cursor position is unaffected.
ESC N	Deletes the character under the cursor. All the characters to the right of the cursor are shuffled one column to the left. The character at the end of the row is cleared. The cursor position is unaffected.
ESC X *tr lc h w*	Sets the text viewport. *tr* is the row number of the top of the view port plus 32 (#20); *lc* is the column number of the left hand edge of the viewport plus 32 (#20); *h* is the number of rows in the viewport (ie. its height) minus 1 plus 32 (#20); *w* is the number of column in the viewport (ie. its width) minus 1 plus 32 (#20). The cursor is moved if necessary to a position within the viewport.
ESC Y *r c*	Moves the cursor to a given position. *r* is the row number plus 32 (#20); c is the column number plus 32 (#20). If the position is beyond the edge of the viewport, the cursor is moved to the edge of the viewport.
ESC b *c*	Sets the foreground colour. For compatibility with other Amstrad computers, set *c* to either 63 (#3F) or 0 (#00). 63 corresponds to bright; 0 to dark.
ESC c *c*	Sets the background colour. For compatibility with other Amstrad computers, set *c* to either 63 (#3F) or 0 (#00). 63 corresponds to bright; 0 to dark.
ESC d	Clears the viewport up to and including the character at the cursor position. The cursor position is unaffected.
ESC e	Enables the cursor blob.
ESC f	Disables the cursor blob.

ESC j	Saves the cursor position.
ESC k	Restores the cursor position as saved by ESC j.
ESC l	Erases all the characters on the line. The cursor position is unaffected.
ESC o	Erases the line up to and including the character at the cursor position. The cursor position is unaffected.
ESC p	Enters reverse video mode. Printable characters are displayed with the foreground and background colours reversed.
ESC q	Leaves reverse video mode.
ESC r	Enters underline mode.
ESC u	Leaves underline mode.
ESC v	Selects wrapping at the end of the line.
ESC w	Cancels wrapping at the end of the line.
ESC x	Enters 24 x 80 mode.
ESC y	Leaves 24 x 80 mode.

Any other character after an ESC is displayed and the cursor advanced as above. This means that it is possible to display a number of the characters that have the same internal code as a control code by sending ESC followed by the control code. For example, ESC #0D will display ±. However, this is not always the case. In particular, sometimes you cannot display a ↓ (internal code 9) in this way.

Important: The application program from which you send Escape Sequences to the screen (or to the printer) can affect their interpretation. For example, an application that automatically converts tabs into spaces can affect any Escape Sequence that includes the value 9. (Such an application program is BASIC: however, in BASIC this problem is readily solved by using the OPTION NOT TAB command.)

Appendix IV

Error messages

IV.1 Disc handling errors

In all these cases, typing `R` causes the system to Retry; typing `I` causes the system to carry on to its next action; typing `C` causes the command to be abandoned. Note that I is a last ditch option, for use when all else fails – it is unwise to select the I option as things are left in an indeterminate state.

As a general rule, Retry until you are convinced that there is a serious problem in reading from or writing to the disc. Then copy all the files you can onto another disc before reformatting the disc. As you will remember, reformatting a disc clears it of all the data stored on it.

`drive not ready - Retry, Ignore or Cancel?`
: Usually means the drive you have just accessed has no disc in it. Put a disc in the drive and type R

`write protected - Retry, Ignore or Cancel?`
: Means that you have tried to write to a write-protected disc. Write enable the disc and type R, or cancel the operation by typing C

`track` *t* `seek fail - Retry, Ignore or Cancel?`
: May be caused by a drive fault, try 'Retrying' a few times.

`track` *t*`, sector` *s* `data error - Retry, Ignore or Cancel?`
: Data is corrupted; may be caused by a damaged disc. Try 'Retrying' a few times.

`track` *t*`, sector` *s* `no data - Retry, Ignore or Cancel?`
: Your file has been corrupted. Type C to cancel, then copy as many files as you can onto another disc and then try re-formatting the disc. If you cannot re-format the disc, the disc is damaged and you should not use it.

`track` *t*`, sector` *s* `missing address mark - Retry, Ignore or Cancel?`
: Your disc is only partially formatted, not formatted at all or it has been damaged. Type C to cancel, then copy as many files as you can onto another disc and then try re-formatting the disc. If you cannot re-format the disc, the disc is damaged and you should not use it.

`bad format - Retry, Ignore or Cancel?`
: Disc may be unformatted or of a totally alien format.

`unknown error - Retry, Ignore or Cancel?`
Try 'Retrying' a few times.

`media changed - Retry, Ignore or Cancel?`
You appear to have inserted a different disc. Release the disc, check that it was the disc you meant to insert and that you inserted it the right way up. Then Retry or Cancel as appropriate.

`disc unsuitable - Retry, Ignore or Cancel?`
You are trying to write to the wrong type of disc – probably to a 180k disc. You can only write to 720k discs in the PCW9512's disc drive. Release the disc and insert a 720k disc; then Retry.

IV.2 Device Errors

If you try to use a device (ie peripheral) that is either not attached or not workng, the message

device `not ready - retry, Ignore or Cancel?`

will appear on the screen. *device* will be replaced by the name of the physical device: CEN for a Centronics interface; SIO for a serial port; LPT for the printer; PAR for the built-in Centronics interface; etc.

The effect of typing `R` will be to try the operation again.

The effect of typing `I` will be to move on to the next part of the operation.

The effect of typing `C` will be both to cancel the present operation and to set up a 'Sink' so that all future output that is directed to that device will be thrown away.

IV.3 CP/M Plus error messages

Tabulated below are the error messages listed by Digital Research in its CP/M Plus User's Guide, together with an explanation of why the error occurred. The utility being used when the error occurred is given where approriate.

In general, you should check that the command you gave was correct, check that the disc is properly inserted in the drive ano try again.

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`Assign a password to this file.`

SET. A password mode has been selected for this but no password has been assigned.

`Auxiliary device redirection not implemented.`

GET and PUT. AUXIN and AUXOUT cannot be redirected to a file.

`Bad close.`

SAVE. An error occurred during the attempt to close the file, probably because the file is write-protected.

`Bad Logical Device Assignment;`

DEVICE. Only the following logical devices are valid: CON:, CONIN:, CONOUT:, AUX:, AUXIN:, AUXOUT:, LST:.

`BAD PARAMETER`

PIP. You entered an illegal parameter in a PIP command. Retype the entry correctly.

`Bad password.`

RENAME. The password supplied by the user is incorrect.

`Baud rate cannot be set for this device.`

DEVICE. Only physical devices that have the SOFT-BAUD attribute can have their baud rates changed. To check the attributes of the physical device, type DEVICE *physical-dev.*

`Cannot have both create and access time stamps.`

SET. CP/M Plus supports either create or access time stamps, but not both.

`Cannot label a drive with a file referenced.`

SET. SET does not allow mixing of files and drives.

`CANNOT OPEN SOURCE FILE.`

HEXCOM. The HEX file is not on the specified drive(s).

`Cannot redirect from BIOS.`

GET, PUT. This message is displayed as a warning only if the system has an invalid BIOS.

`Cannot set both RO and RW.`

SET. A file canot be set to both Read-Only and Read-Write.

`Cannot set both SYS and DIR.`

SET. A file cannot be set to both SYS and DIR.

`CAN'T DELETE TEMP FILE`

PIP. A temporary $$$ file already exists which is Read-Only. Use the SET command to change the attribute to Read-Write, then erase it.

`Break "x" at c.`

ED. "*x*" is one of the symbols described below and *c* is the command letter being executed when the error occurred.

#	Search failure. ED cannot find the string specified in an F, N, or S command.
?	Unrecognised command letter *c*. ED does not recognize the indicated command letter, or an E, H, O.or Q command is not alone on its command line.
O	The file specified in an R command cannot be found.
>	Buffer full. ED cannot put any more characters in the memory buffer, or the string specified in an F, N, or S command is too long.
E	Command aborted. A keystroke at the console aborted command execution.
F	Disk or directory full. This error is followed by either the disk or directory full message. Refer to the recovery procedures listed under these messages.

`CANNOT CLOSE:`
`CANNOT CLOSE FILE.`
`CANNOT CLOSE DESTINATION FILE` –*filespec*

GENCOM, HEXCOM, LIB-80, LINK-80, MAC, PIP, RMAC, SUBMIT. An output file cannot be closed. This can occur if the disk is removed before the program terminates.

`Cannot delete file.`

GENCOM. CP/M cannot delete a file. Check to see if the COM file is Read-Only or password-protected

`CHECKSUM ERROR.`

HEXCOM, PIP. A hex record checksum error was encountered. The hex record that produced the error must be corrected, probably by recreating the hex file.

`Close error.`

XREF. This message is preceded by the *filename*. XRF. The disk might have been removed before the program terminated.

`Closing file HELP.DAT`
`Closing file HELP.HLP`

HELP. HELP encountered error while processing the HELP.DAT or the HELP.HLP file.

`COM file found and NULL option.`

GENCOM. The NULL option implies that no COM file is to be loaded, just the RSXs.

COM file required

DIR, ERASE, RENAME, TYPE. Options in the built-in command line require support from a transient COM file that CP/M Plus cannot find on disk.

COMMON ERROR:

LINK-80. An undefined common block has been selected.

CORRECT ERROR, TYPE RETURN OR CTRL-Z

PIP. A hex record checksum was encountered during the transfer of a hex file. The hex file with the checksum error should be corrected, probably by recreating the hex file.

CP/M Error on *d*:Disk I/O
BDOS Function = *xx* File = *filespec*

CP/M Plus displays the preceding message if the disk is defective or improperly formatted (wrong density).

CP/M Error on *d*: Invalid Drive
BDOS Function = *xx* File = *filespec*

CP/M Plus displays the preceding message when there is no disk in the drive, the drive latch is open, or the power is off. It also displays the message when the specified drive is not in the system.

CP/M Error on *d*: Read/Only Disk
BDOS Function = *xx* File = *filespec*

CP/M Plus does not allow you to erase, rename, update, or set attributes of a file residing in a Read-Only drive. Use the SET command to set the drive attribute to Read-Write.

CP/M Error on *d*: Read/Only File
BDOS Function = *xx* File = *filespec*

CP/M Plus does not allow you to erase, rename, update, or set attributes of a file that is Read-Only. Use the SET command to set the file attribute to Read-Write.

Date and Time Stamping Inactive.

DIR. The DATE option was specified, but the disk directory has not been initialized with date/time stamping.

DESTINATION IS R/O, DELETE (Y/N)?

PIP. The destination file specified in a PIP command already exists and it is Read-Only. If you type Y, the destination file is deleted before the file copy is done. If you type N, PIP displays the message **NOT DELETED** and aborts the copy operation.

```
Device Reassignment Not Supported.
Enter new assignment or hit RETURN.
```

DEVICE. A device assignment is invalid.

```
Directory already re-formatted.
```

INITDIR. The directory already has date/time stamping.

```
DIRECTORY FULL
```

ED. There is not enough directory space for the file being written to the destination disk. You can use the 0X*filespec* command to erase any unnecessary files on the disk without leaving the editor.

SUBMIT. There is not enough directory space on the temporary file drive to write the temporary file used for processing SUBMIT files. Use the SETDEF command to determine which drive is the temporary file drive. Use the ERASE command to erase unnecessary files or set the temporary file drive to a different drive and retry.

LIB-80, LINK-80. There is no directory space for the output or intermediate files. Use the ERASE command to remove unnecessary files.

HEXCOM. There is no directory space for the output COM file.

```
Directory needs to be reformatted for date/time stamps.
```

SET. A date/time option was specified, but the directory has not been initialized for date/time stamping. Use the INITDIR command to initialize the directory for date/time stamping.

```
DISK FULL
```

ED. There is not enough disk space for the output file. This error can occur on the E, H, W, or X commands. If it occurs with X command, you can repeat the command prefixing the filename with a different drive.

```
DISK READ
DISK READ ERROR:
DISK READ ERROR-filespec
```

HEXCOM, LIB-80, LINK-80, PIP. The disk file specified cannot be read.

```
DISK WRITE
DISK WRITE ERROR
DISK WRITE ERROR-filespec
DISK WRITE NO DATA BLOCK
```

HEXCOM, LIB-80, LINK-80, PIP, SUBMIT. A disk write operation cannot be successfully performed probably because the disk is full. Use the ERASE command to remove unnecessary files.

`Do you want another file? (Y/N)`

PUT. Enter `Y` to redirect output to an additional file. Otherwise, enter `N`.

`Drive defined twice in search path`

SETDEF. A drive can be specified only once in the search path order.

`Drive Read Only`

ERASE, RENAME. The specified file is on a Read-Only drive and cannot be erased or renamed.

`Duplicate RSX in header. Replacing old by new. This file was not used.`

GENCOM. The specified RSX is already attached to the COM file. The old one is discarded.

`Duplicate input RSX.`

GENCOM. Two or more RSXs of the same name are specified. GENCOM uses only one of the RSXs.

`END OF FILE, ^Z,?`

`PIP` encountered an unexpected end-of-file during a HEX file transfer.

`End of line expected.`

DEVICE, GET, PUT, SETDEF. The command typed does not have any further parameters. An end-of-line was expected. Any further characters on line were ignored.

`Error at end of line:`

DEVICE, GET, PUT, SETDEF. The error detected occurred at the end of the input line.

`Error on line` *nnnnn*`:`

SUBMIT. The SUBMIT program displays its messages in the preceding format, where *nnnnn* represents the line nuber of the SUBMIT file. Refer to the message following the line number for explanation of the error.

`FILE ERROR`

ED. Disk or directory is full, and ED cannot write anything more on the disk. This is a fatal error, so make sure there is enough space on the disk to hold a second copy of the file before invoking ED.

`File already exists;Delete it? (Y/N)`
`file already exists, delete (Y/N)?`

PUT. Enter `Y` to delete the file. Otherwise the program terminates.

RENAME. The above message is preceded by *filespec*. You have asked CP/M Plus to create or rename a file using a file specification that is already assigned to another file. Either delete the existing file or use another file specification.

`File exists, erase it`

ED. The destination filename already exists when you are placing the destination file on a different disk than the source. It should be erased or another disk selected to receive the output file.

`FILE IS READ/ONLY`

ED. The file specified in the command to invoke ED has the Read-Only attribute. ED can read the file so that you can examine it, but ED cannot change a Read-Only file.

PUT. The file specified to receive the output is a Read-Only file.

`FILE NAME ERROR:`

LIB-80. The form of a source filename is invalid.

`File not found.`
`FILE NOT FOUND - filespec`

DUMP, ED, GENCOM, GET, PIP, SET. An input file that you have specified does not exist. Check that you have entered the correct drive specification or that you have the correct disk in the drive.

`First submitted file must be a COM file.`

GENCOM. A COM File is expected as the first file in the command tail. The only time GENCOM does not expect to see a COM file in the first position of the command tail is when the NULL option is specified.

`FIRST COMMON NOT LARGEST:`

LINK-80. A subsequent COMMON declaration is larger than the first COMMON declaration for the indicated block. Check that the files being linked are in the proper order, or that the modules in a library are in the proper order.

`HELP. DAT not on current drive.`

HELP. HELP cannot find HELP.DAT file to process.

`Illegal command tail.`

DIR. The command line has an invalid format or option.

`Illegal Format Value.`

DIR. Only SIZE and FULL options can be used for display formats.

`Illegal Global/Local Drive Spec Mixing`

DIR. Both a filespec with a drive specifier and the DRIVE option appears in the command.

`Illegal filename.`

SAVE. There is an error in the filespec on the command line.

`Illegal Option or Modifier.`

DIR. An invalid option or abbreviation was used.

`Illegal date/time specification.`

DATE. Date/time format is invalid.

`Incorrect file specification.`

RENAME. The format of the *filespec* is invalid.

`INDEX ERROR:`

LINK-80. The index of an IRL contains invalid information.

`INSUFFICIENT MEMORY:`

GET, LINK-80, PUT, SUBMIT. There is not enough memory to allocate buffers, or there are too many levels of SUBMIT nesting.

`Invalid ASCII character`

SUBMIT. The SUBMIT file contains an invalid character. (#0FF).

`Invalid command.`

GET and PUT. The string or substring typed in the command line was not recognized as a valid command in the context used.

`Invalid delimiter.`

DEVICE, GET, PUT, SET. The delimiter, [ ], = or space, – was not valid at the location used. For example a [was used where an = should have been used.

`INVALID DESTINATION:`

PIP. An invalid drive or device was specified.

`INVALID DIGIT - filespec`

PIP. An invalid hex digit has been encountered while reading a hex file. The hex file with the invalid hex digit should be corrected, probably by recreating the hex file.

`Invalid drive.`

SETDEF. The specified drive was not a valid drive. Drives recognized by SETDEF are * (default drive) and A to P.

GENCOM, TYPE. Valid drives are A to P.

`Invalid File.`
`INVALID FILENAME`
`Invalid file specification.`

ED, ERASE, GENCOM, GET, PIP, PUT, SET, SUBMIT, TYPE. The filename typed does not conform to the normal CP/M Plus file naming conventions.

`INVALID FORMAT`

PIP. The format of your PIP command is illegal. See the description of the PIP command.

`INVALID HEX DIGIT.`

HEXCOM. An invalid hex digit has been encountered while reading a hex file. The hex file with the invalid hex digit should be corrected by recreating the hex file.

`Invalid number.`

DEVICE. A number was expected but not found, or the number was out of range; numbers must be from 0 to 255.

`Invalid option.`

DEVICE and GET. An option was expected and the string found was not a device option or was not valid in the context used.

SETDEF. The option typed in the command line is not a valid option. Valid options are DISPLAY, NO DISPLAY, NO PAGE, ORDER, PAGE, TEMPORARY.

`Invalid option or modifier.`

DIR, GET, PUT. The option typed is not a valid option.

`INVALID PARAMETER:`

MAC, RMAC. An invalid assembly parameter was found in the input line. The assembly parameters are printed at the console up to the point of the error.

`INVALID PASSWORD`
`Invalid password or passwords not allowed.`

ED, PIP. The specified password is incorrect, or a password was specified, but the file is not password-protected.

`Invalid physical device.`

DEVICE. A physical device name was expected. The name found in the command string does not correspond to any physical device name in the system.

`INVALID REL FILE:`

LINK-80. The file indicated contains an invalid bit pattern. Make sure that a REL or IRL file has been specified.

`Invalid RSX type.`

GENCOM. Filetype must be RSX.

`Invalid SCB offset.`

GENCOM. The specified SCB is out of range. The SCB offset range is #00 – #64.

`INVALID SEPARATOR`

PIP. You have placed an invalid character for a separator between two input filenames.

`INVALID SOURCE`

PIP. An invalid drive or device was specified. AUX and CON are the only valid devices.

`Invalid type for ORDER option.`

SETDEF. The type specified in the command line was not COM or SUB.

`Invalid SYM file format`

XREF. The filename. SYM file input to XREF is invalid.

`INVALID USER NUMBER`

PIP. You have specified a user number greater than 15. User numbers are in the range 0 to 15.

`Invalid wildcard.`

RENAME. The filespec contained an invalid wildcard specification.

`Invalid wild card in the FCB name or type field.`

GENCOM. GENCOM does not allow wildcards in filespecs.

`LOAD ADDRESS LESS THAN 100.`

HEXCOM. The program origin is less than #100.

`MAIN MODULE ERROR:`

LINK-80. A second main module was encountered.

`Make error`

XREF. There is no more directory space on the specified drive.

`MEMORY OVERFLOW:`

LINK-80. There is not enough memory to complete the link operation.

`Missing Delimiter or Unrecognized Option.`

ERASE. The ERASE command line format is invalid.

`Missing left parenthesis.`

GENCOM. The SCB option must be enclosed by a left parenthesis.

`Missing right parenthesis.`

GENCOM. The SCB option is not enclosed with a right parenthesis.

`Missing SCB value.`

GENCOM. The SCB option requires a value.

`More than four drives specified.`

SETDEF. More than four drives were specified for the drive search chain.

`MULTIPLE DEFINITION:`

LINK-80. The specified symbol is defined in more than one of the modules being linked.

n?

USER. You specified a number greater than fifteen for a user area number. For example, if you type `USER 18` the screen displays `18?`

`No directory label exists.`

SHOW. The LABEL option was requested but the disk has no label.

`No directory space`
`NO DIRECTORY SPACE` – *filespec*

GENCOM, MAC, PIP, RMAC, and SAVE. There is not enough directory space for the output file. Use the ERASE command to remove unnecessary files on the disk and try again.

`No disk space.`

SAVE. There is not enough space on the disk for the output file. Use the SHOW command to display the amount of disk space left and use the ERASE command to remove unnecessary files from the disk, or use another disk with more file space.

NO FILE:
NO FILE – *filespec*

DIR, ERASE, LIB-80, LINK-80, PATCH, PIP, RENAME, TYPE. The specified file cannot be found in the specified drive(s).

No HELP.HLP file on the default drive.

HELP. The file HELP. HLP must be on the default drive.

NO INPUT FILE PRESENT ON DISK

DUMP. The file you requested does not exist.

No memory

There is not enough memory available for loading the specified program.

No modifier for this option.

GENCOM. A modifier was specified but none is required.

NO MODULE:

LIB-80. The indicated module cannot be found.

No more space in the header for RSXs or SCB initialization.

GENCOM. The header has room for only 15 entries, or the combination of RSXs and SCBs exceed the maximum.

No options specified.

SET. Specify an option.

No PRN file.

XREF. The file filename.PRN is not present on the specified drive.

No Records Exist.

DUMP. Only a directory entry exists for the file.

NO SOURCE FILE PRESENT:

MAC, RMAC. The source file cannot be found on the specified drive.

NO SPACE

SAVE. There is no space in the directory for the file being written

No 'SUB' file found

SUBMIT. The SUB file typed in the command line cannot be found in the drive search process.

`No such file to rename.`

RENAME. The file to be renamed does not exist on the specified drive(s).

`No SYM file`

XREF. The file `filename.SYM` is not present on the specified drive.

`NON-SYSTEM FILE(S) EXIST`

DIRSYS. If nonsystem (DIR) files reside on the specified drive, DIRSYS displays this message.

`Not enough available memory.`
`Not Enough Memory`
`Not Enough Memory for Sort.`

DIR, INITDIR. There is not enough memory for data or sort buffers.

`Not enough room in directory.`

INITDIR. There is not enough remaining directory space to allow for the date and time extension.

`NOT FOUND`

PIP. PIP cannot find the specified file.

`Not renamed,` *filespec* `read only.`

RENAME. The specified file cannot be renamed because it is Read-Only.

`OPEN FILE NONRECOVERABLE`

PIP. A disk has the wrong format or a bad sector.

`Option only for drives.`

SET. The specified option is not valid for files.

`Option requires a file reference.`

SET. The specified option requires a filespec.

`Options not grouped together.`

DIR. Options can only be specified within one set of brackets..

`Output File Exists, Erase It.`

The output file specified must not already exist.

`OUTPUT FILE READ ERROR:`

MAC, RMAC. An output file cannot be written properly, probably because the disk is full. Use the ERASE command to delete unnecessary files from the disk.

`OVERLAPPING SEGMENTS:`

LINK-80. LINK-80 attempted to write a segment into memory already used by another segment.

```
Page and nopage option selected.
No page in effect.
```

SET. The preceding options are mutually exclusive.

`Parameter Error`

SUBMIT. Within the SUBMIT file of type SUB, valid parameters are $0 through $9.

`Password Error.`

DUMP, ERASE, GENCOM, TYPE. The password is incorrect.

`Physical Device Does Not Exist.`

DEVICE. The specified physical device is not defined in the system.

`PROGRAM INPUT IGNORED`

SUBMIT. This message is preceded by `"WARNING"`. The SUBMIT file contains a line with <, and the program does not require additional input.

`PUT>`

PUT. This prompt occurs when a program requests input while running a `PUT FILE [NO ECHO]` command.

`PUT ERROR: FILE ERASED.`

PUT. The PUT output file was erased and could not be closed.

`QUIT NOT FOUND.`

PIP. The string argument to a Q parameter was not found in your input file.

`Random Read`

SUBMIT. An error occurred when reading the temporary file used by the SUBMIT command.

`Read only.`

GENCOM, SET. The drive or file specified is write-protected.

`Read error`

TYPE. An error occurred when reading the file specified in the TYPE command. Check the disk and try again.

`Reading file HELP.HLP`
`Reading HELP.HLP index`

HELP. An error occurred while reading HELP. HLP. Copy the HELP.HLP file from the system disk.

`RECORD TOO LONG`

PIP. A HEX record exceeds 80 characters in a file being copied with the [H] option.

`Requires CP/M 3.0 or higher.`

DATE, DEVICE, DIR, ERASE, GENCOM, HELP, INITDIR, PIP, SET, SETDEF, SHOW, RENAME, TYPE. This version of the utility must only be run under CP/M Plus (Version 3.0 or higher).

`R/O DISK`
`R/O FILE`

PIP. The destination drive/file is set to Read-Only and PIP cannot write to it.

`Sort Stack Overflow`

DIR. There is not enough memory available for the sort stack.

`SOURCE FILE READ ERROR:`

MAC, RMAC. The source file cannot be read properly by MAC

`SOURCE FILENAME ERROR:`

MAC, RMAC. The form of the source filename is invalid.

`START NOT FOUND`

PIP. The string argument to an S parameter cannot be found in the source file.

`Symbol Table Overflow`

XREF. No space is available for an attempted symbol allocation.

`Symbol Table reference overflow`

XREF. No space is available for an attempted symbol reference allocation.

`SYNTAX ERROR:`

LIB. The LIB-80 command is not properly formed.

`Too many entries in Index Table.`
`Not enough memory`

HELP. There is not enough memory available to hold the topic table while creating HELP.HLP.

```
Topic:
xxxxxx
Not found.
```

HELP. The topic requested does not exist in the HELP.HLP file. HELP displays the topics available.

```
Total file size exceeds 64K.
```

GENCOM. The output file exceeds the maximum allowed.

```
Try 'PAGE' or 'NO PAGE'
```

TYPE. The only valid option is PAGE or NO PAGE

```
Unable to close HELP.DAT.
Unable to close HELP.HLP.
```

HELP. An error occurred while closing file HELP.HLP or HELP.DAT. There might not be enough disk or directory space on the drive.

```
Unable to find file HELP.HLP
```

HELP. HELP requires HELP.HLP file to operate. Copy it to your default drive from your CP/M Plus system disk.

```
Unable to Make HELP.DAT.
Unable to Make HELP.HLP.
```

HELP. There is not enough space on the disk for HELP.HLP or HELP.DAT, or the files are Read-Only.

```
UNBALANCED MACRO LIBRARY.
```

MAC, RMAC. A MACRO definition was started within a macro library, but the end of the file was found in the library before the balancing ENDM was encountered.

```
UNDEFINED START SYMBOL:
```

LINK-80. The symbol specified with the G switch is not defined in any of the modules being linked.

```
UNDEFINED SYMBOLS:
```

LINK-80. The symbols following this message are referenced but not defined in any of the modules being linked.

UNEXPECTED END OF HEX FILE – *filespec*

PIP. An end-of-file was encountered before a termination hex record. The hex file without a termination record should be corrected, probably by recreating the hex file.

`Unrecognized drive.`

SHOW. The specified drive is not valid. Valid drives are A to P.

`UNRECOGNIZED ITEM:`

LINK-80. An unfamiliar bit pattern has been scanned and ignored by LINK-80.

`Unrecognized input.`

SHOW. The SHOW command line has an invalid format.

`Unrecognized option.`

GENCOM and SHOW. An option typed in the command line is not valid for the command.

`USER ABORTED`

PIP. You stopped a PIP operation by pressing CTRL-C.

`VERIFY ERROR:` *filespec*

PIP. When copying with the V option, PIP found a difference when rereading the data just written and comparing it to the data in its memory buffer.

`Write error`

XREF. This message is preceded by *filename*.XRF and indicates that no disk space is available, or no directory space exists on the specified drive.

`Writing file:` *filespec*

HELP. An error occurred while attempting to write the file specified by *filespec*.

`Wrong Password.`

SET. The specified password is incorrect or invalid.

`?`

SID.SID has encountered an error.

MAC/RMAC error messages

B **Balance error**: macro does not terminate properly, or conditional assembly operation is ill formed.

C **Comma error**: expression was encountered but not delimited properly from the next item by a comma.

D **Data error**: element in a data statement (DB or DW) cannot be placed in the specified data area.

E **Expression error**: expression is ill formed and cannot be computed at assembly time.

I **Invalid character error**: a nongraphic character has been found in the line other than a carriage return, line-feed, tab, or end-of-file; edit the file, delete the line with the I error, and retype the line.

L **Label error**: label cannot appear in this context; it might be a duplicate label.

M **Macro overflow error**: internal macro expansion table overflow; might be due to too many nested invocations or infinite recursion.

N **Not implemented error**: features that appear in RMAC, such as relocation, are recognized, but flagged in MAC.

O **Overflow error**: expression is too complicated (i.e., has too many pending operators), string is too long, or too many successive substitutions of a formal parameter by its actual value in a macro expansion. This error also occurs if the number of LOCAL labels exceeds 9999.

P **Phase error**: label does not have the same value on the two passes through the program, or the order of macro definition differs between the two successive passes; might be due to MACLIB that follows a mainline macro; if so, move the MACLIB to the top of the program.

R **Register error**: the value specified as a register is not compatible with the operation code.

S **Syntax error**: the fields of this statement are ill formed and cannot be processed properly; might be due to invalid characters or delimeters that are out of place.

U **Undefined symbol**: a label operand in this statement has not been defined elsewhere in the program.

V **Value error**: operand encountered in an expression is improperly formed; might be due to delimiter out of place or nonnumeric operand.

LIB-80 error messages

CANNOT CLOSE	LIB-80 cannot close the output file. The disk might be write-protected.
DIRECTORY FULL	There is no directory space for the output file
DISK READ ERROR	LIB-80 cannot read the file properly
DISK WRITE ERROR	LIB-80 cannot write to the file properly, probably due to a full disk.
FILE NAME ERROR	The form of a source filename is invalid
NO FILE	LIB-80 cannot find the indicated file
NO MODULE	LIB-80 cannot find the indicated module
SYNTAX ERROR	The LIB-80 command line is not properly formed

Overlay Manager run-time error messages

ERROR (8) OVERLAY, NO FILE *d*: *filename*.OVL
The Overlay Manager cannot find the indicated file.

ERROR (9) OVERLAY, DRIVE *d*:*filename*.OVL
An invalid drive code was passed as a parameter to ?ovlay.

ERROR (10) OVERLAY, SIZE *d*:*filename*.OVL
The indicated overlay would overwrite the PL/I stack and/or free space if it were loaded.

ERROR (11) OVERLAY, NESTING *d*: *filename*.OVL
Loading the indicated overlay would exceed the maximum nesting depth.

ERROR (12) OVERLAY, READ *d*:*filename*.OVL
Disk read error during overlay load, probably caused by premature EOF.

Dr. Logo error messages

General

Message	Suggested action
`I don't know how to` *name*	Check spelling of *name*
`Primitive not implemented`	Try another way of getting desired result
`Can't` *action* `from the editor`	Wait until you get back into text mode
`I can't` *action* `while loading`	Wait
`Can't divide by zero`	Check the sum you want to do
`Turtle out of bounds`	Check your instruction
`Out of space`	Issue a `recycle` instruction to tidy up the workspace
`Too few items in` *list*	Check either your instruction or your list

Procedures

name `is a primitive`	Choose another *name*
`Not enough inputs to` *procedure-name*	Check the format of your instruction
variable `has no value`	Modify your program so that this is set
variable `is not true or false`	Modify your program so that this is set
`The word is too long`	You have been too ambitious in adding together strings of characters: modify your program
`Number too big`	Modify what you have asked Dr. Logo to do...
variable `is not a parameter`	Check the definition of the procedure
`I don't know what to do with` *name*	Check your program
`Can't find label` *name*	Check your program
`Can't find catch for` *name*	Check your program
`) without (`	Check your program for unmatched parentheses
`if wants [ ]'s around instruction list`	Check your program for unmatched brackets
procedure-name `doesn't like` *name* `as input`	Check the definition of the procedure
procedure-name `didn't output`	Check the definition of the procedure

Discs

Message	Suggested action
I'm having trouble with the disk	Try again
Disk is full	See if you can erase some files
File already exists	Either erase the existing file or choose a different name
File not found	Check the directory
Disk is write protected	Write enable or use another disc
The file is write protected	Allow read-write access to the file
I can't find that drive	Check your instruction
I can't find the disk drive	Check your instruction
You need at least 2 drives to do this	Choose a different operation
Source and Destination diskettes differ	Check your instruction

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